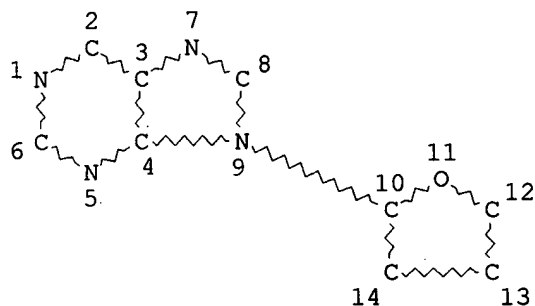
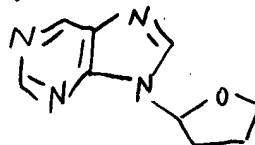


=&gt; d que

L1 STR



← parent  
structures  
for  
all



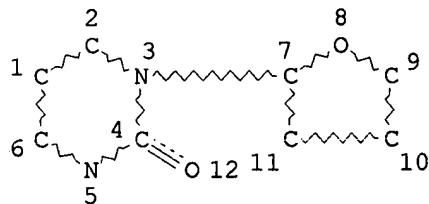
based compounds

NODE ATTRIBUTES:  
DEFAULT MLEVEL IS ATOM  
DEFAULT ECLEVEL IS LIMITED

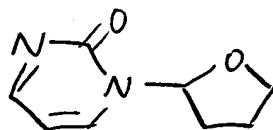
GRAPH ATTRIBUTES:  
RING(S) ARE ISOLATED OR EMBEDDED  
NUMBER OF NODES IS 14

STEREO ATTRIBUTES: NONE

|     |       |     |               |        |        |                    |  |
|-----|-------|-----|---------------|--------|--------|--------------------|--|
| L3  | 97886 | SEA | FILE=REGISTRY | SSS    | FUL    | L1                 |  |
| L4  | 62788 | SEA | FILE=REGISTRY | ABB=ON | PLU=ON | L3 AND P/ELS       |  |
| L5  | 60691 | SEA | FILE=REGISTRY | ABB=ON | PLU=ON | L4 AND N>4 AND O>5 |  |
| L6  | 9742  | SEA | FILE=REGISTRY | ABB=ON | PLU=ON | L5 AND NRS=2       |  |
| L7  | 7034  | SEA | FILE=REGISTRY | ABB=ON | PLU=ON | L6 NOT S/ELS       |  |
| L8  | 3646  | SEA | FILE=REGISTRY | ABB=ON | PLU=ON | L7 AND C<12        |  |
| L9  | 3491  | SEA | FILE=REGISTRY | ABB=ON | PLU=ON | L8 NOT F/ELS       |  |
| L10 | 3490  | SEA | FILE=REGISTRY | ABB=ON | PLU=ON | L9 NOT SI/ELS      |  |
| L11 | 3287  | SEA | FILE=REGISTRY | ABB=ON | PLU=ON | L10 NOT CL/ELS     |  |
| L12 |       |     |               |        |        | STR                |  |



← parent structure for all



based compounds

NODE ATTRIBUTES:  
DEFAULT MLEVEL IS ATOM  
DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:  
RSPEC 7 3  
NUMBER OF NODES IS 12

STEREO ATTRIBUTES: NONE

|     |       |     |               |        |        |                           |  |
|-----|-------|-----|---------------|--------|--------|---------------------------|--|
| L14 | 95896 | SEA | FILE=REGISTRY | SSS    | FUL    | L12                       |  |
| L15 | 21405 | SEA | FILE=REGISTRY | ABB=ON | PLU=ON | L14 AND NRS=2 AND NR=2    |  |
| L16 | 1824  | SEA | FILE=REGISTRY | ABB=ON | PLU=ON | L15 AND P/ELS AND N>1 AND |  |

O>6 AND C<10

L17 1393 SEA FILE=REGISTRY ABB=ON PLU=ON L16 NOT (CL/ELS OR F/ELS OR SI/ELS OR S/ELS)

L18 4680 SEA FILE=REGISTRY ABB=ON PLU=ON L17 OR L11

L19 12788 SEA FILE=HCAPLUS ABB=ON PLU=ON (FLAVOR/CT OR BITTERNESS/CT OR ACRIDITY/CT OR "BITTER FLAVOR"/CT OR "BITTER TASTE"/CT OR "BITTER PRINCIPLES"/CT)

L24 4753 SEA FILE=HCAPLUS ABB=ON PLU=ON (L19 OR ?BITTER? OR TAST? OR FLAVOR? OR FLAVOUR?) (L) (INHIBIT? OR MASK? OR HID?)

L25 90 SEA FILE=HCAPLUS ABB=ON PLU=ON L24 AND L18

L26 ( 181627) SEA FILE=REGISTRY ABB=ON PLU=ON NCNC2-NCNC3/ES

L27 ( 2820) SEA FILE=REGISTRY ABB=ON PLU=ON OC4-OPOC3/ES

L28 ( 2139) SEA FILE=REGISTRY ABB=ON PLU=ON L26 AND L27

L29 ( 1346) SEA FILE=REGISTRY ABB=ON PLU=ON L28 AND NR=4

L30 ( 1346) SEA FILE=REGISTRY ABB=ON PLU=ON L29 AND NRS<3

L31 ( 532) SEA FILE=REGISTRY ABB=ON PLU=ON OC4/ES AND NCNC2-NCNC3/ES AND NR=3 AND NRS=2 AND N=5 AND O=8 AND P=1

L32 ( 770) SEA FILE=REGISTRY ABB=ON PLU=ON NCNC3/ES AND OC4/ES AND N=2 AND O=9 AND P=1 AND NR=2 AND NRS=2

L33 ( 477) SEA FILE=REGISTRY ABB=ON PLU=ON OC4/ES AND NCNC2-NCNC3/ES AND NR=3 AND NRS=2 AND N=5 AND O=6 AND P=1

L34 ( 287) SEA FILE=REGISTRY ABB=ON PLU=ON NCNC3/ES AND OC4/ES AND N=3 AND O=7 AND P=1 AND NR=2 AND NRS=2

L35 ( 1058) SEA FILE=REGISTRY ABB=ON PLU=ON OC4/ES AND NCNC2-NCNC3/ES AND NR=3 AND NRS=2 AND N=5 AND O=7 AND P=1

L36 ( 405) SEA FILE=REGISTRY ABB=ON PLU=ON OC4/ES AND NCNC2-NCNC3/ES AND NR=3 AND NRS=2 AND N=5 AND O=12 AND P=3

L37 ( 4861) SEA FILE=REGISTRY ABB=ON PLU=ON L30 OR LL8 OR L31 OR L32 OR L33 OR L34 OR L35 OR L36

L38 ( 370) SEA FILE=HCAPLUS ABB=ON PLU=ON L37(L) (FLAVOR? OR FLAVOUR? OR ?BITTER? OR TAST?)

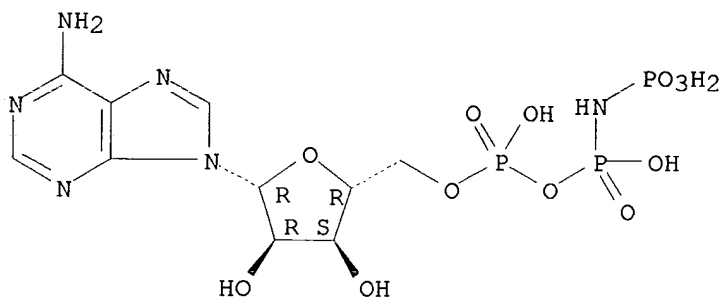
L39 ( 14567) SEA FILE=HCAPLUS ABB=ON PLU=ON L37(L) (MASK? OR INHIBIT? OR HID?)

L40 17 SEA FILE=HCAPLUS ABB=ON PLU=ON L39 AND L38

L41 75 SEA FILE=HCAPLUS ABB=ON PLU=ON L25 NOT L40

L41 ANSWER 1 OF 75 HCAPLUS COPYRIGHT 2002 ACS  
 AN 2001:823000 HCAPLUS  
 DN 136:67373  
 TI Cytochemical examination of the AMP-PNP-hydrolyzing enzymatic activity in rabbit **taste** bud cells: Effects of **inhibitors** and activators of ATP pyrophosphatase and of adenylyl cyclase  
 AU Asanuma, Naokazu; Anod, Hiroshi  
 CS Dep. Oral Physiology, Matsumoto Dental Univ. Sch. Dentistry, Japan  
 SO Matsumoto Shigaku (2001), 27(1), 10-20  
 CODEN: MATSDE; ISSN: 0385-1613  
 PB Matsumoto Shika Daigaku Gakkai  
 DT Journal  
 LA English  
 AB In the apical regions of rabbit **taste** bud cells, esp. on the surface of the microvilli, there exists an enzymic activity that hydrolyzes an ATP analog, 5'-adenylylimidodiphosphate. Since our previous study had suggested that this activity was that of either ATP pyrophosphatase or adenylyl cyclase, the effects of **inhibitors** and activators of these enzymes on the enzymic activity were examd. cytochem. ATP pyrophosphatase **inhibitors** (dithiothreitol, sodium fluoride and amiloride) reduced the enzymic activity, while adenylyl cyclase **inhibitors** (p-chloromercuriphenylsulfonic acid and 5,5'-dithio-bis(2-nitrobenzoic acid)) did not. The effect of a mild activator of ATP pyrophosphatase (sodium azide) was not generally clear. Forskolin, a potent activator of adenylyl cyclase, did not show any enhancing effect. Ca<sup>2+</sup> enhanced the enzymic activity. The results indicate that the enzymic activity is that of ATP pyrophosphatase and probably that of Ca<sup>2+</sup>-dependent type.  
 IT **25612-73-1**, AMP-PNP  
 RL: BSU (Biological study, unclassified); BIOL (Biological study)  
 (ATP pyrophosphatase and calcium in AMP-PNP hydrolysis in rabbit taste bud cells)  
 RN 25612-73-1 HCAPLUS  
 CN 5'-Adenylic acid, monoanhydride with imidodiphosphoric acid (8CI, 9CI)  
 (CA INDEX NAME)

Absolute stereochemistry.



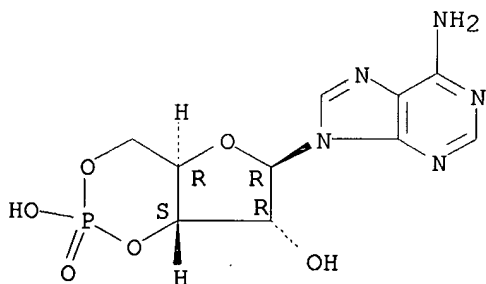
RE.CNT 39 THERE ARE 39 CITED REFERENCES AVAILABLE FOR THIS RECORD  
 ALL CITATIONS AVAILABLE IN THE RE FORMAT

L41 ANSWER 2 OF 75 HCAPLUS COPYRIGHT 2002 ACS  
 AN 2001:787297 HCAPLUS  
 DN 136:35325

TI Glutamate transduction mechanism in mouse taste cells  
 AU Sugimoto, Kumiko; Nakashima, Kiyohito; Yasumatsu, Keiko; Sasamoto, Kazushige; Ninomiya, Yuzo  
 CS Section Mol. Neurobiol., Grad. Sch., Tokyo Med. Dental Univ., Tokyo, 113-8549, Japan  
 SO Sensory Neuron (2001), 3(3), 139-154  
 CODEN: SNEEBI; ISSN: 1567-5157  
 PB VSP BV  
 DT Journal  
 LA English  
 AB In order to clarify the role of group III metabotropic glutamate receptor (including mGluR4) in transduction for umami **taste**, we investigated the effects of monosodium glutamate (MSG) and 2-amino-4-phosphonobutyrate (L-AP4), a mGluR4 agonist, on **taste** cells by use of electrophysiol. and biochem. methods, and Ca<sup>2+</sup> imaging in C57BL mice. The responses of the chorda tympani (CT) nerve to MSG were suppressed by gurmarin, a sweet response **inhibitor**, indicating that the MSG response may be partly mediated by sweet receptors, while the CT responses to L-AP4 and the glossopharyngeal (GL) nerve responses to MSG were little suppressed by gurmarin suggesting that these responses may be mediated by only umami receptors. Biochem. study demonstrated that MSG stimulation significantly elevated both adenosine 3',5'-cyclic monophosphate (cAMP) and inositol 1,4,5-triphosphate (IP3) levels in the fungiform papillae. The increase in cAMP might occur through sweet receptors, which is consistent with CT nerve responses. The increase in IP3 levels may relate to intracellular events mediated by group III mGluRs, because MSG and L-AP4 induced increment of intracellular Ca<sup>2+</sup> concn. in some **taste** cells. Whole-cell patch-clamp recording from isolated **taste** cells showed that L-AP4 induced not only outward currents with a conductance decreases but also inward currents with conductance increases at about resting potentials. These inward currents reversed at +10-+30 mV suggesting that cation conductance was activated by L-AP4. These results strongly support the idea that phospholipase C activation mediated by group III mGluRs is involved in transduction mechanism for umami **taste**, and also suggest the possibility that stimulation of the mGluRs may cause activation of cation conductance as well as [Ca<sup>2+</sup>]<sub>i</sub> elevation.

IT 60-92-4, CAMP  
 RL: BSU (Biological study, unclassified); BIOL (Biological study) (cation conductance and phospholipase C activation in glutamate transduction mechanism in mouse taste cells in relation to)  
 RN 60-92-4 HCAPLUS  
 CN Adenosine, cyclic 3',5'-(hydrogen phosphate) (8CI, 9CI) (CA INDEX NAME)

Absolute stereochemistry.



RE.CNT 46 THERE ARE 46 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L41 ANSWER 3 OF 75 HCAPLUS COPYRIGHT 2002 ACS

AN 2001:513863 HCAPLUS

DN 135:224289

TI Reconstituted ion channels of frog fungiform papilla cell membrane

AU Fukasawa, Takashi; Kumazawa, Takashi; Miyamoto, Takenori; Fujiyama, Rie; Okada, Yukio; Sato, Toshihide

CS Department of Materials Science and Engineering, Saitama Institute of Technology, Nagasaki University School of Dentistry, Japan

SO Zool. Sci. (2001), 18(3), 299-307

CODEN: ZOSCEX; ISSN: 0289-0003

PB Zoological Society of Japan

DT Journal

LA English

AB We identified a Cl<sup>-</sup> channel, 2 K<sup>+</sup> channels, and a cAMP-gated channel which were isolated from bullfrog fungiform papilla cell membranes and incorporated into phospholipid bilayers using the tip-dip method. The 156 pS channels were **inhibited** by 100 .mu.M DIDS and displayed the reversal potential identical to the equil. potential of Cl<sup>-</sup>, it was identified as a Cl<sup>-</sup> channel. Two types of K<sup>+</sup> channel had unitary conductances of 79 and 43 pS, which may correspond to those of Ca<sup>2+</sup>-activated and cAMP-blockable K<sup>+</sup> channels obsd. in isolated intact frog **taste** cell membranes, resp. These results suggest that the tip-dip method is useful for stable investigation of the properties of ion channels already identified in the **taste** cell. Furthermore, the 23 pS channels were newly found and were activated directly by internal cAMP as cyclic nucleotide-gated (CNG) nonselective cation channels established in olfactory receptor cells. Thus, our results suggest the possibility that besides Cl<sup>-</sup> and K<sup>+</sup> channels, the cAMP-gated channels contribute to **taste** transduction.

IT 60-92-4, CAMP

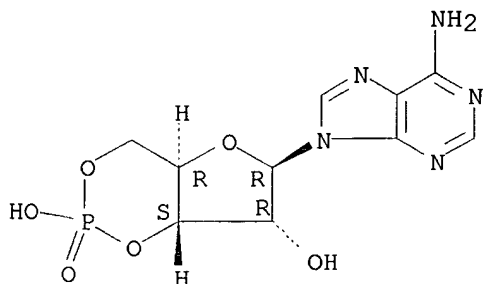
RL: BAC (Biological activity or effector, except adverse); BIOL (Biological study)

(reconstituted ion channels of frog fungiform papilla cell membrane)

RN 60-92-4 HCAPLUS

CN Adenosine, cyclic 3',5'-(hydrogen phosphate) (8CI, 9CI) (CA INDEX NAME)

Absolute stereochemistry.

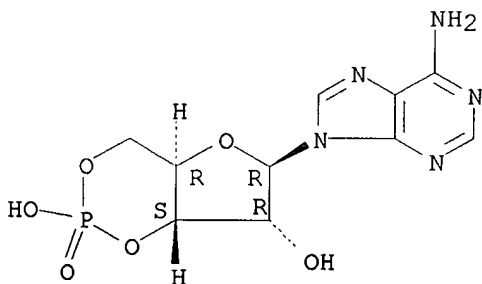


RE.CNT 30 THERE ARE 30 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L41 ANSWER 4 OF 75 HCAPLUS COPYRIGHT 2002 ACS

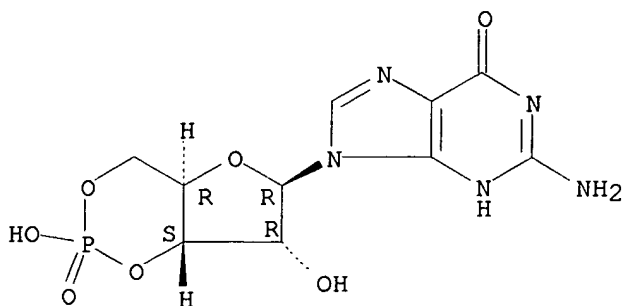
AN 2001:308836 HCAPLUS  
 DN 135:17439  
 TI Bitter taste transduced by PLC-.beta.2-dependent rise in IP3 and .alpha.-gustducin-dependent fall in cyclic nucleotides  
 AU Yan, Wentao; Sunavala, Gulshan; Rosenzweig, Sophia; Dasso, Max; Brand, Joseph G.; Spielman, Andrew I.  
 CS Department of Basic Science and Craniofacial Biology, Division of Biological Science, Medicine, New York University College of Dentistry, New York, NY, 10010, USA  
 SO Am. J. Physiol. (2001), 280(4, Pt. 1), C742-C751  
 CODEN: AJPHAP; ISSN: 0002-9513  
 PB American Physiological Society  
 DT Journal  
 LA English  
 AB Current evidence points to the existence of multiple processes for **bitter taste** transduction. Previous work demonstrated involvement of the polyphosphoinositide system and an .alpha.-gustducin (G.alpha.gust)-mediated stimulation of phosphodiesterase in **bitter taste** transduction. Addnl., a **taste**-enriched G protein .gamma.-subunit, G.gamma.13, colocalizes with G.alpha.gust and mediates the denatonium-stimulated prodn. of inositol 1,4,5-trisphosphate (IP3). Using quench-flow techniques, we show here that the **bitter** stimuli, denatonium and strychnine, induce rapid (50-100 ms) and transient redns. in cAMP and cGMP and increases in IP3 in murine **taste** tissue. This decrease of cyclic nucleotides is **inhibited** by G.alpha.gust antibodies, whereas the increase in IP3 is not affected by antibodies to G.alpha.gust. IP3 prodn. is **inhibited** by antibodies specific to phospholipase C-.beta.2 (PLC-.beta.2), a PLC isoform known to be activated by G.beta..gamma.-subunits. Antibodies to PLC-.beta.3 or to PLC-.beta.4 were without effect. These data suggest a transduction mechanism for **bitter taste** involving the rapid and transient metab. of dual second messenger systems, both mediated through a **taste** cell G protein, likely composed of G.alpha.gust/.beta./gamma.13, with both systems being simultaneously activated in the same **bitter**-sensitive **taste** receptor cell.  
 IT 60-92-4, CAMP 7665-99-8, CGMP  
 RL: BPR (Biological process); BIOL (Biological study); PROC (Process) (bitter taste transduced by PLC-.beta.2-dependent rise in IP3 and .alpha.-gustducin-dependent fall in cyclic nucleotides)  
 RN 60-92-4 HCAPLUS  
 CN Adenosine, cyclic 3',5'-(hydrogen phosphate) (8CI, 9CI) (CA INDEX NAME)

Absolute stereochemistry.



RN 7665-99-8 HCAPLUS  
 CN Guanosine, cyclic 3',5'-(hydrogen phosphate) (8CI, 9CI) (CA INDEX NAME)

Absolute stereochemistry.



RE.CNT 59 THERE ARE 59 CITED REFERENCES AVAILABLE FOR THIS RECORD  
 ALL CITATIONS AVAILABLE IN THE RE FORMAT

L41 ANSWER 5 OF 75 HCAPLUS COPYRIGHT 2002 ACS

AN 2001:288653 HCAPLUS

DN 134:294924

TI Food sweetness-upgrading agents containing nucleic acid components and food containing the agents

IN Uchimura, Nobuhiro; Oshima, Hiroshi; Araki, Hiroko; Sakaida, Akemi; Saito, Susumu; Shinhashi, Osamu

PA Kohjin Co., Ltd., Japan

SO Jpn. Kokai Tokkyo Koho, 9 pp.

CODEN: JKXXAF

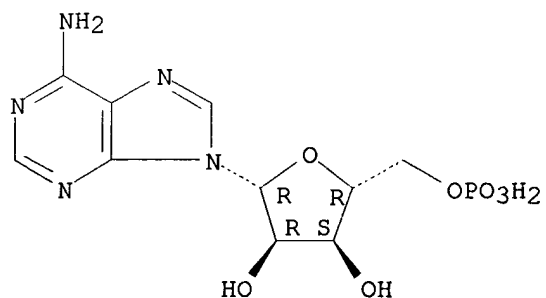
DT Patent

LA Japanese

FAN.CNT 1

|    | PATENT NO.  | KIND | DATE     | APPLICATION NO. | DATE     |
|----|---|------|----------|-----------------|----------|
| PI | JP 2001112433   | A2   | 20010424 | JP 1999-292150  | 19991014 |
| AB | Sweetness-upgrading agents, which <b>mask bitterness</b> and astringency due to artificial sweeteners and give refreshing aftertaste, contain nucleic acid components, e.g. Na 5'-inosinate, Na 5'-adenylate (I), Na 5'-guanylate, Na 5'-uridylylate (II), and Na 5'-cytidylate. Food contg. the agents are also claimed. Addn. of I and II to a com. fermented milk prepn. (contg. aspartame) <b>masked bitterness</b> and astringency and enhanced sweetness. |      |          |                 |          |
| IT | <b>4578-31-8 5550-12-9</b> , Sodium 5'-guanylate<br><b>6757-06-8</b> , Sodium 5'-Cytidylate <b>7545-48-4</b> , Sodium 5'-uridylylate<br>RL: FFD (Food or feed use); BIOL (Biological study); USES (Uses)<br>(food sweetness-upgrading agents contg. nucleic acid components such as nucleoside monophosphate Na salts)  |      |          |                 |          |
| RN | 4578-31-8 HCAPLUS   |      |          |                 |          |
| CN | 5'-Adenylic acid, disodium salt (7CI, 8CI, 9CI) (CA INDEX NAME)   |      |          |                 |          |

Absolute stereochemistry.

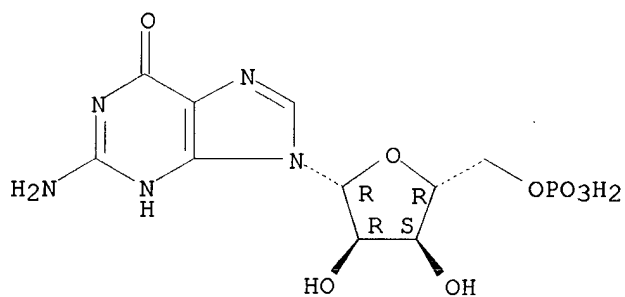


● 2 Na

RN 5550-12-9 HCAPLUS

CN 5'-Guanylic acid, disodium salt (7CI, 8CI, 9CI) (CA INDEX NAME)

Absolute stereochemistry.

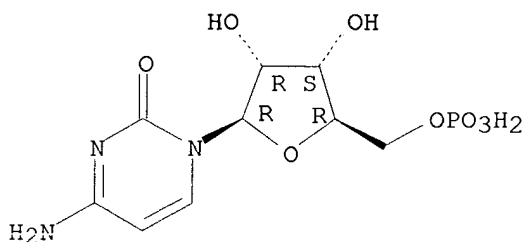


● 2 Na

RN 6757-06-8 HCAPLUS

CN 5'-Uridylic acid, disodium salt (7CI, 8CI, 9CI) (CA INDEX NAME)

Absolute stereochemistry.



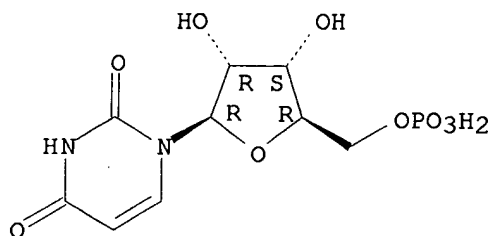
● 2 Na



RN 7545-48-4 HCAPLUS

CN 5'-Uridylic acid, sodium salt (8CI, 9CI) (CA INDEX NAME)

Absolute stereochemistry.



● x Na

L41 ANSWER 6 OF 75 HCAPLUS COPYRIGHT 2002 ACS

AN 2001:6463 HCAPLUS

DN 135:4817

TI The study of the factors involved in taste of Gyokuro, specially produced high-grade green tea.

AU Horie, Hideki; Ujihara, Tomomi; Kohata, Katsunori

CS Ornamental Plants and Tea, National Research Institute of Vegetables, Kanaya, Shizuoka, 428-8501, Japan

SO Nippon Aji to Nioi Gakkaishi (2000), 7(3), 611-614

CODEN: NNGAEW; ISSN: 1340-4806

PB Nippon Aji to Nioi Gakkai

DT Journal

LA Japanese

AB The relationships between **taste** and components in the Gyokuro green tea were studied. Also, harsh **taste**-decreasing mechanism due to oxalic acid in the Gyokuro green tea was investigated. Polysaccharides from Gyokuro green tea **inhibited** protein-tannin deposition, suggested the effect of polysaccharides on harsh **taste** decrease in Gyokuro tea. Citric acid **inhibited** the formation of calcium oxalate deposition, suggested that org. acid in Gyokuro tea **inhibited** harsh **taste** due to calcium oxalate deposition.

IT **61-19-8**, Adenylic acid, biological studies **29593-02-0**, Guanylic acid

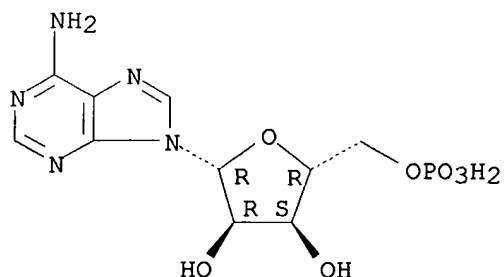
RL: BOC (Biological occurrence); BIOL (Biological study); OCCU (Occurrence)

(factors involved in taste of Gyokuro green tea.)

RN 61-19-8 HCAPLUS

CN 5'-Adenylic acid (8CI, 9CI) (CA INDEX NAME)

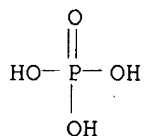
Absolute stereochemistry.



RN 29593-02-0 HCAPLUS  
 CN Guanylic acid (9CI) (CA INDEX NAME)

CM 1

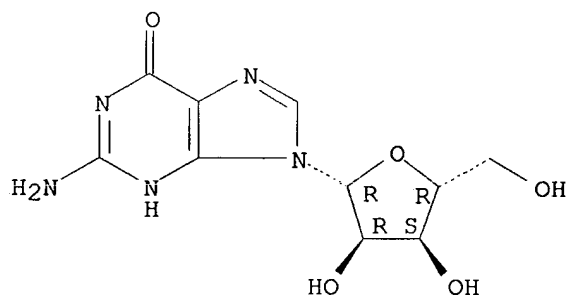
CRN 7664-38-2  
 CMF H3 O4 P



CM 2

CRN 118-00-3  
 CMF C10 H13 N5 O5

Absolute stereochemistry.



L41 ANSWER 7 OF 75 HCAPLUS COPYRIGHT 2002 ACS  
 AN 2000:765266 HCAPLUS  
 DN 134:83766  
 TI Prolactin signaling in erythrophores and xanthophores of teleost fish  
 AU Oshima, Noriko; Goto, Miyoshi  
 CS Department of Biomolecular Science, Faculty of Science, Toho University,  
 Chiba, 274-8510, Japan  
 SO Pigment Cell Research, Supplement (2000), 8, 35-40

CODEN: PCSUET; ISSN: 0906-9305

PB Munksgaard International Publishers Ltd.

DT Journal

LA English

AB Prolactin directly affects erythrophores and xanthophores of teleost fish, resulting in pigment dispersion. In the present study, signal transduction elicited by prolactin was examd. using split-tail fin prepns. of the rose **bitterling** (*Rhodeus ocellatus ocellatus*) and Nile tilapia (*Oreochromis niloticus*), and cultured erythrophores and xanthophores from the paradise goby (*Rhinogobius giurinus*) and rose **bitterling**. When antibodies to the prolactin receptor were added to an ovine prolactin (oPRL) soln., pigment dispersion within cultured cells was significantly **inhibited**, suggesting the existence of a prolactin receptor in the cell membrane. In mammals and birds, prolactin receptors belong to a cytokine receptor superfamily and signal through a tyrosine kinase-mediated pathway. Therefore, the authors examd. the effects of three kinds of protein tyrosine kinase **inhibitors** on pigment dispersion elicited by oPRL. None of those **inhibitors** depressed the response. On the other hand, lithium ions (an **inhibitor** of adenylate cyclase) and H-88 and H-89 (**inhibitors** of protein kinase A) decreased the levels of oPRL-induced pigment dispersion in a dose-dependent manner. In cultured cells treated with cholera toxin for 3 h, the effect of oPRL was irreversible, indicating the possible involvement of Gs protein in the prolactin action. From these results, the authors conclude that cAMP may be a second messenger in the dispersion of pigment induced by prolactin and that a novel protein receptor coupled with a Gs protein may be present in the membrane of erythrophores and xanthophores of teleost fish.

IT 60-92-4, CAMP

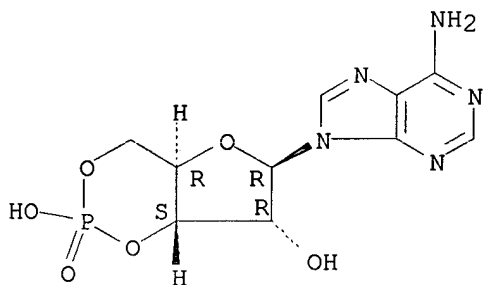
RL: BPR (Biological process); BSU (Biological study, unclassified); BIOL (Biological study); PROC (Process)

(prolactin signaling in erythrophores and xanthophores of teleost fish)

RN 60-92-4 HCAPLUS

CN Adenosine, cyclic 3',5'-(hydrogen phosphate) (8CI, 9CI) (CA INDEX NAME)

Absolute stereochemistry.



RE.CNT 26 THERE ARE 26 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L41 ANSWER 8 OF 75 HCAPLUS COPYRIGHT 2002 ACS

AN 2000:538979 HCAPLUS

DN 133:235819

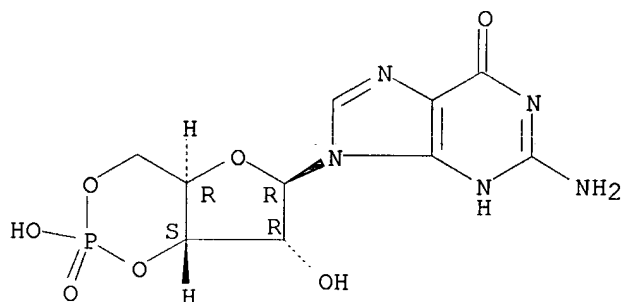
TI Sucrose-stimulated subsecond transient increase in cGMP level in rat  
intact circumvallate taste bud cells

AU Krizhanovsky, Valery; Agamy, Orly; Naim, Michael  
 CS Institute of Biochemistry, Food Science, and Nutrition, Faculty of  
 Agricultural, Food, and Environmental Quality Sciences, The Hebrew  
 University of Jerusalem, Rehovot, 76-100, Israel  
 SO Am. J. Physiol. (2000), 279(1, Pt. 1), C120-C125  
 CODEN: AJPHAP; ISSN: 0002-9513  
 PB American Physiological Society  
 DT Journal  
 LA English  
 AB Initial sweet **taste** transduction is expected to occur in the  
 subsecond time range. The authors demonstrate a rapid and transient  
 (75-250 ms) increase of cGMP (but not cAMP) level in rat intact  
 circumvallate **taste** cells after stimulation by sucrose. This  
 rapid increase does not occur in nonsensory epithelial cells.  
 Pretreatment with a nonspecific phosphodiesterase (PDE) **inhibitor**  
 (IBMX), a specific cAMP-PDE4 **inhibitor** (denbufylline), or an  
 adenylyl cyclase activator (forskolin) all increased basal cAMP and  
 abolished the sucrose-stimulated cGMP increase at 150 ms. Pretreatment  
 with a sol. guanylyl cyclase **inhibitor** (1H-[1,2,4]oxadiazolo[4,3-  
 a]quinoxalin-1-one) reduced, whereas a specific cGMP-PDE **inhibitor**  
 (zaprinast) abolished, the sucrose-stimulated cGMP increase. It is  
 proposed that cGMP is involved in the initial stage of sugar **taste**  
 transduction and that cGMP is more significant than cAMP at this stage.  
 Activation of sol. guanylyl cyclase and **inhibition** of cGMP-PDE  
 may be involved in the transient elevation of cGMP in response to sucrose  
 stimulation. Moreover, it appears that cAMP level must remain low for  
 sucrose to stimulate an increase in cGMP.

IT **7665-99-8**, CGMP  
 RL: BOC (Biological occurrence); BIOL (Biological study); OCCU  
 (Occurrence)  
 (sucrose-stimulated subsecond transient increase in cGMP level in  
 circumvallate taste bud cells)

RN 7665-99-8 HCAPLUS  
 CN Guanosine, cyclic 3',5'-(hydrogen phosphate) (8CI, 9CI) (CA INDEX NAME)

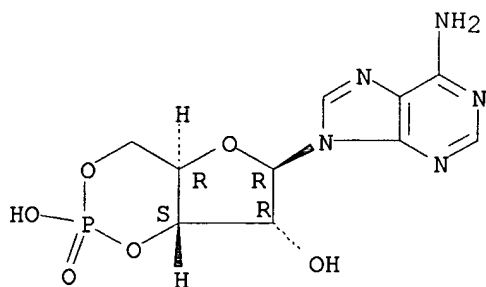
Absolute stereochemistry.



IT **60-92-4**, CAMP  
 RL: BOC (Biological occurrence); BIOL (Biological study); OCCU  
 (Occurrence)  
 (sucrose-stimulated subsecond transient increase in cGMP level in  
 circumvallate taste bud cells in relation to)

RN 60-92-4 HCAPLUS  
 CN Adenosine, cyclic 3',5'-(hydrogen phosphate) (8CI, 9CI) (CA INDEX NAME)

Absolute stereochemistry.



RE.CNT 31 THERE ARE 31 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L41 ANSWER 9 OF 75 HCAPLUS COPYRIGHT 2002 ACS

AN 2000:223186 HCAPLUS

DN 132:318256

TI Responses to umami substances in taste bud cells innervated by the chorda tympani and glossopharyngeal nerves

AU Ninomiya, Yuzo; Nakashima, Kiyohito; Fukuda, Atsuo; Nishino, Hitoo; Sugimura, Tadataka; Hino, Akihiko; Danilova, Victoria; Hellekant, Goran

CS Department of Oral Physiology, Asahi University School of Dentistry, Gifu, 501-0223, Japan

SO J. Nutr. (2000), 130(4S), 950S-953S

CODEN: JONUAI; ISSN: 0022-3166

PB American Society for Nutritional Sciences

DT Journal

LA English

AB The chorda tympani (CT) and glossopharyngeal (GL) nerves of several mammalian species respond differently to umami substances (US) such as monosodium glutamate (MSG), disodium 5'-inosinate (IMP) and disodium 5'-guanylate (GMP). In mice and rhesus monkeys, responses to US are greater in the GL than the CT nerve, with the GL nerve contg. larger nos. of MSG-sensitive fibers. Gurmarin, a sweet response **inhibitor**, suppresses the mouse CT responses to the mixt. of MSG and IMP to .apprx.65% of control levels but not to the metabotropic and ionotropic glutamate agonists 2-amino-4-phosphonobutyrate and N-methyl-D-aspartate. Gurmarin does not **inhibit** any **taste** responses in the GL. In mice, CT responses to MSG may be **masked** by their greater sensitivity to sodium ions. Calcium imaging studies demonstrate that some mouse **taste** cells isolated from the fungiform papilla innervated by the CT respond selectively (as indicated by a rise in intracellular Ca<sup>2+</sup> concns.) to MSG and/or IMP or GMP. These MSG responses are not suppressed notably by reducing the Ca<sup>2+</sup> concn. of the stimulus soln., suggesting that the obsd. Ca<sup>2+</sup> release is from intracellular stores. Measurements of second messengers in the mouse fungiform papilla have revealed consistently that MSG elicits increases in both inositol 1,4,5-trisphosphate and cAMP levels. Together, these results suggest that US may stimulate two different transduction mechanisms in the fungiform papilla. They also suggest that gurmarin-insensitive components of receptors for US, including metabotropic and ionotropic glutamate receptors, may be commonly involved in transduction for umami **taste** in **taste** cells on both anterior and posterior

parts of the tongue.

IT **5550-12-9**, Disodium 5'-guanylate

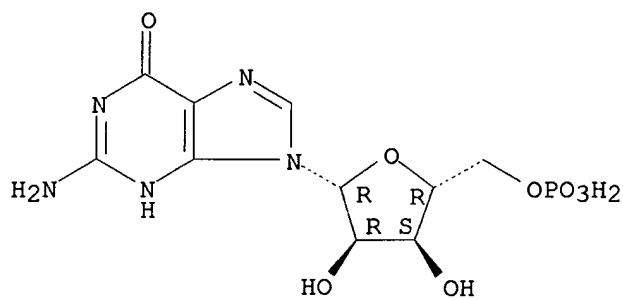
RL: BAC (Biological activity or effector, except adverse); BIOL  
(Biological study)

(mechanisms involved in responses to umami substances in taste bud  
cells innervated by chorda tympani and glossopharyngeal nerves)

RN 5550-12-9 HCAPLUS

CN 5'-Guanylic acid, disodium salt (7CI, 8CI, 9CI) (CA INDEX NAME)

Absolute stereochemistry.



● 2 Na

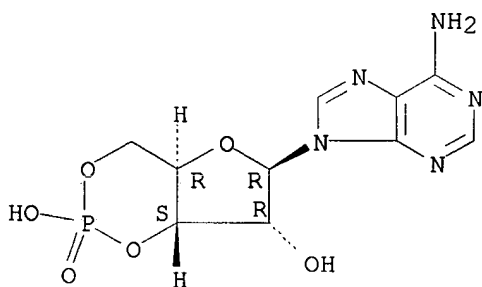
IT **60-92-4**, CAMP

RL: BPR (Biological process); BIOL (Biological study); PROC (Process)  
(mechanisms involved in responses to umami substances in taste bud  
cells innervated by chorda tympani and glossopharyngeal nerves)

RN 60-92-4 HCAPLUS

CN Adenosine, cyclic 3',5'-(hydrogen phosphate) (8CI, 9CI) (CA INDEX NAME)

Absolute stereochemistry.



RE.CNT 38 THERE ARE 38 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L41 ANSWER 10 OF 75 HCAPLUS COPYRIGHT 2002 ACS

AN 2000:223182 HCAPLUS

DN 132:320175

TI Physiological studies on umami taste

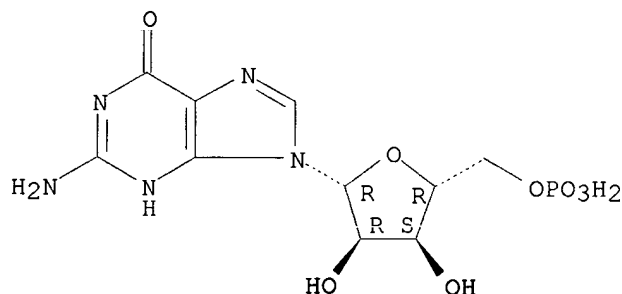
AU Kurihara, Kenzo; Kashiwayanagi, Makoto

CS Graduate School of Pharmaceutical Sciences, Hokkaido University, Sapporo,

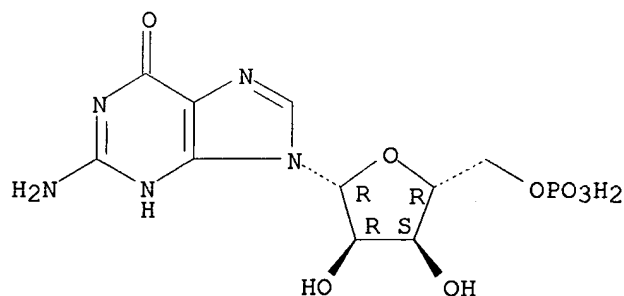
060-0812, Japan  
 SO J. Nutr. (2000), 130(4S), 931S-934S  
 CODEN: JONUAI; ISSN: 0022-3166  
 PB American Society for Nutritional Sciences  
 DT Journal  
 LA English  
 AB The first electrophysiol. studies on umami **taste** were conducted with rats and cats. Unlike humans, these animals did not show a large synergism between monosodium glutamate (MSG) and disodium guanylate (GMP) or disodium inosinate (IMP). The **taste** nerve responses of these animals to umami substances were not differentiated from the salt responses. The canine **taste** system was sensitive to umami substances and showed a large synergism between MSG and GMP or IMP. The umami substances showed no enhancing effects on other basic **tastes**. Amiloride, an **inhibitor** for the response to NaCl, did not **inhibit** the large response induced by the synergism between MSG and the nucleotides, indicating that the response to the umami substances is independent of the response to salt. Single-fiber anal. on the responses of mouse glossopharyngeal nerve and monkey primary **taste** cortex neurons also showed that the responses to umami substances are independent of other basic **tastes**. On the basis of these results, it was proposed that the umami **taste** is a fifth basic **taste**, and that there is a unique receptor for umami substances. Hence, the authors compared the **taste** of agonists for brain glutamate receptors. In humans, the order of intensity of umami **taste** induced by a mixt. of 0.5 mmol/L GMP and 1.5 mmol/L of various agonists was glutamate > ibotenate > L(+)-2-amino-4-phosphonobutyric acid (L-AP4) = (.+-. )1-aminocyclopentane-trans-1,3-dicarboxylic acid (ACPD). Kainate, N-methyl-D-aspartic acid (NMDA) and (RS)-amino-3-hydroxy-5-methyl-4-isoxazolepropionic acid (AMPA), which are agonists for ionotropic receptors, had no umami **taste**. It was concluded that the umami receptor is not identical to any known glutamate receptors; there seems, therefore, to be a unique receptor for umami.

IT 5550-12-9, Disodium guanylate  
 RL: BAC (Biological activity or effector, except adverse); BIOL (Biological study)  
 (physiol. studies on umami taste in relation to unique umami receptors vs. glutamate receptors in humans)  
 RN 5550-12-9 HCAPLUS  
 CN 5'-Guanylic acid, disodium salt (7CI, 8CI, 9CI) (CA INDEX NAME)

Absolute stereochemistry.



2 Na



● 2 Na

RE.CNT 19 THERE ARE 19 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L41 ANSWER 11 OF 75 HCAPLUS COPYRIGHT 2002 ACS

AN 2000:53392 HCAPLUS

DN 132:117561

TI Use of prenyltransferase inhibitors for preparing a medicine for treating  
pathologies resulting from heterotrimeric G protein membrane fixation

IN Prevost, Gregoire; Lonchampt, Marie-Odile

PA Societe de Conseils de Recherches et d'Applications Scientifiques  
(S.C.R.A.S, Fr.

SO PCT Int. Appl., 58 pp.

CODEN: PIXXD2

DT Patent

LA French

FAN.CNT 1

|      | PATENT NO.     | KIND   | DATE     | APPLICATION NO. | DATE     |
|------|----------------|--|----------|-----------------|----------|
| PI   | WO 2000002558  | A1   | 20000120 | WO 1999-FR1611  | 19990705 |
|      | W:             | AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM |          |                 |          |
|      | RW:            | GH, GM, KE, LS, MW, SD, SL, SZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG   |          |                 |          |
|      | FR 2780892     | A1   | 20000114 | FR 1998-8730    | 19980708 |
|      | FR 2780892     | B1   | 20010817 |                 |          |
|      | AU 9946224     | A1   | 20000201 | AU 1999-46224   | 19990705 |
|      | EP 1094810     | A1   | 20010502 | EP 1999-929396  | 19990705 |
|      | R:             | AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, FI   |          |                 |          |
|      | NO 2001000030  | A  | 20010108 | NO 2001-30      | 20010103 |
| PRAI | FR 1998-8730   | A  | 19980708 |                 |          |
|      | WO 1999-FR1611 | W  | 19990705 |                 |          |

OS MARPAT 132:117561

AB Prenyltransferase **inhibitors** are used for prepg. a medicine for  
treating pathologies resulting from prenylation of the .gamma. subunit of  
G protein. Said diseases comprise in particular diseases related to the



following biol. functions or disorders: smell, **taste**, light perception, neurotransmission, neurodegeneration, endocrine and exocrine gland functioning, autocrine and paracrine regulation, blood pressure, embryogenesis, viral infection, immunol. functions, diabetes, and obesity.

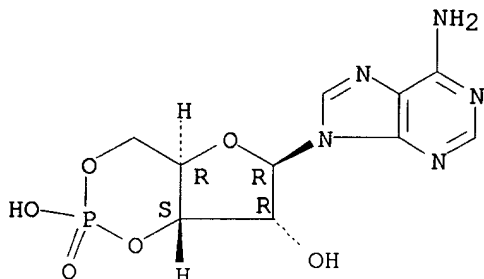
IT 60-92-4, Cyclic AMP

RL: BPR (Biological process); BIOL (Biological study); PROC (Process) (prenyltransferase inhibitor prepn. for treating diseases resulting from heterotrimeric G protein membrane fixation)

RN 60-92-4 HCAPLUS

CN Adenosine, cyclic 3',5'-(hydrogen phosphate) (8CI, 9CI) (CA INDEX NAME)

Absolute stereochemistry.



RE.CNT 12 THERE ARE 12 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L41 ANSWER 12 OF 75 HCAPLUS COPYRIGHT 2002 ACS

AN 1999:561432 HCAPLUS

DN 132:103964

TI Species-dependent specificity of platelet aggregation inhibitors from snake venom

AU Lombardi, P.; Pelagalli, A.; Avallone, L.; D'Angelo, D.; Belisario, M. A.; D'Angelo, A.; Staiano, N.

CS Dipartimento di Strutture, Funzioni e Tecnologie Biologiche, Universita di Napoli Federico II, Naples, 80137, Italy

SO J. Comp. Pathol. (1999), 121(2), 185-190

CODEN: JCVPAR; ISSN: 0021-9975

PB W. B. Saunders Co. Ltd.

DT Journal

LA English

AB Echistatin, **flavoridin** and kistrin belong to a family of low mol. wt. snake-venom proteins, termed "disintegrins" because of their ability to bind integrin receptors on the cell surfaces. Most disintegrins contain the tripeptide arginine-glycine-aspartic acid (RGD) sequence, which represents a common cell adhesion recognition site. Here the authors report the differing activity of echistatin, **flavoridin** and kistrin on ADP-induced aggregation of platelets from the buffalo, dog and horse. The three disintegrins **inhibited** the aggregation of platelets from all three animal species at nanomolar concns. Echistatin was the most active of the disintegrins towards equine platelets, but **flavoridin** and kistrin showed a higher potency than echistatin in **inhibiting** aggregation of platelets from the buffalo and dog. Kistrin was 1.6-fold more effective than **flavoridin** in **inhibiting** ADP-induced aggregation of platelets from either the buffalo or dog, whereas **flavoridin** was

2.1-fold more active than kistrin in **inhibiting** aggregation of equine platelets. The species-dependent platelet sensitivity to these snake-venom proteins may reflect structural differences of the integrin receptor GP IIb/IIIa on the platelet surface in different mammalian species.

IT 58-64-0, 5'-ADP, biological studies

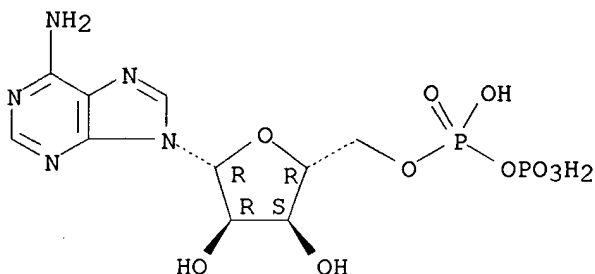
RL: BAC (Biological activity or effector, except adverse); BPR (Biological process); BIOL (Biological study); PROC (Process)

(-induced platelet aggregation; platelet aggregation inhibitors from snake venom of snake venoms in relation to species)

RN 58-64-0 HCAPLUS

CN Adenosine 5'-(trihydrogen diphosphate) (9CI) (CA INDEX NAME)

Absolute stereochemistry.



RE.CNT 20 THERE ARE 20 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L41 ANSWER 13 OF 75 HCAPLUS COPYRIGHT 2002 ACS

AN 1999:484558 HCAPLUS

DN 131:142607

TI Transduction for sweet taste of saccharin may involve both inositol 1,4,5-trisphosphate and cAMP pathways in the fungiform taste buds in C57BL mice

AU Nakashima, Kiyohito; Ninomiya, Yuzo

CS Dep. Chemistry, School Dentistry, Asahi Univ., Gifu, 501, Japan

SO Cell. Physiol. Biochem. (1999), 9(2), 90-98

CODEN: CEPBEW; ISSN: 1015-8987

PB S. Karger AG

DT Journal

LA English

AB The transduction pathways for sweet and **bitter tastes**

were investigated with assays of inositol 1,4,5-trisphosphate (IP3) and cyclic adenosine monophosphate (cAMP) levels in mouse fungiform **taste buds**. Recordings of **taste** responses were also made in the chorda tympani nerve. Stimulation of the tongue with saccharin elicited a significant increase in IP3 levels in the fungiform papilla only at 20 mM but in cAMP levels at 3 and 20 mM, without affecting those of the nonsensory epithelial tissue. Formation of both IP3 and cAMP induced by 20 mM saccharin was suppressed by pretreatment of the tongue with pronase, a proteolytic enzyme which specifically **inhibits** sweet responses. Quinine and denatonium elicited both increases in IP3 levels at a concn. of 20 mM and slight decreases in cAMP levels at concns. of 1-20 mM in the fungiform papilla. Recording of the chorda tympani nerve showed good responses by saccharin, quinine, and denatonium at

concns. of 1 mM and higher. These results suggest that the fungiform **taste** cells in C57BL mice have pronase-sensitive receptors for saccharin, coupled to both the IP3 and the cAMP pathways; the former participates only at high concn., while the latter acts from low to high concns. The results also do not rule out the possibility that a phosphodiesterase-mediated cAMP decrease may be involved in **bitter** transduction for quinine and denatonium.

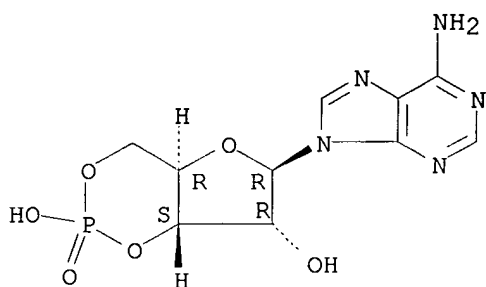
IT 60-92-4, CAMP

RL: BPR (Biological process); BIOL (Biological study); PROC (Process)  
(transduction for sweet taste of saccharin may involve both inositol 1,4,5-trisphosphate and cAMP pathways in the fungiform taste buds in C57BL mice)

RN 60-92-4 HCAPLUS

CN Adenosine, cyclic 3',5'-(hydrogen phosphate) (8CI, 9CI) (CA INDEX NAME)

Absolute stereochemistry.



RE.CNT 28 THERE ARE 28 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L41 ANSWER 14 OF 75 HCAPLUS COPYRIGHT 2002 ACS

AN 1999:288997 HCAPLUS

DN 131:114126

TI Possible novel mechanism for bitter taste mediated through cGMP

AU Rosenzweig, Sophia; Yan, Wentao; Dasso, Maximillian; Spielman, Andrew I.

CS Basic Science Division, New York University College of Dentistry, New York, NY, USA

SO J. Neurophysiol. (1999), 81(4), 1661-1665

CODEN: JONEA4; ISSN: 0022-3077

PB American Physiological Society

DT Journal

LA English

AB **Taste** is the least understood among sensory systems, and **bitter taste** mechanisms pose a special challenge because they are elicited by a large variety of compds. We studied **bitter taste** signal transduction with the quench-flow method and monitored the rapid kinetics of the second messenger guanosine 3',5'-cyclic monophosphate (cGMP) prodn. and degrdn. in mouse **taste** tissue. In response to the **bitter** stimulants caffeine and theophylline but not strychnine or denatonium, cGMP levels demonstrated a rapid and transient increase that peaked at 50 ms and gradually declined throughout the following 4.5 s. The theophylline- and caffeine-induced effect was rapid, transient, concn. dependent and gustatory tissue-specific. The effect could be partially suppressed in the presence of the sol. guanylyl cyclase (GC) **inhibitor** 10

.mu.M ODQ and 30 .mu.M methylene blue but not 50 .mu.M LY 83583 and boosted by nitric oxide donors 25 .mu.M NOR-3 or 100 .mu.M sodium nitroprusside. The proposed mechanism for this novel cGMP-mediated **bitter taste** signal transduction is cGMP prodn. partially by the sol. GC and caffeine-induced **inhibition** of one or several phosphodiesterases.

IT 7665-99-8, Cyclic GMP

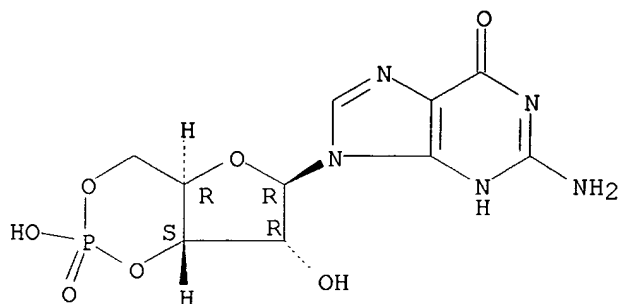
RL: BOC (Biological occurrence); BPR (Biological process); MFM (Metabolic formation); BIOL (Biological study); FORM (Formation, nonpreparative); OCCU (Occurrence); PROC (Process)

(bitter taste signal transduction mediated through cGMP)

RN 7665-99-8 HCAPLUS

CN Guanosine, cyclic 3',5'-(hydrogen phosphate) (8CI, 9CI) (CA INDEX NAME)

Absolute stereochemistry.



RE.CNT 33 THERE ARE 33 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L41 ANSWER 15 OF 75 HCAPLUS COPYRIGHT 2002 ACS

AN 1999:192781 HCAPLUS

DN 130:323185

TI Multiple receptor sites for nucleotide reception in the labellar taste receptor cells of the fleshfly *Boettcherisca peregrina*

AU Furuyama, Akira; Koganezawa, Masayuki; Shimada, Ichiro

CS Biological Institute, Graduate School of Science, Tohoku University, Sendai, 980-8578, Japan

SO J. Insect Physiol. (1999), 45(3), 249-255

CODEN: JIPHAF; ISSN: 0022-1910

PB Elsevier Science Ltd.

DT Journal

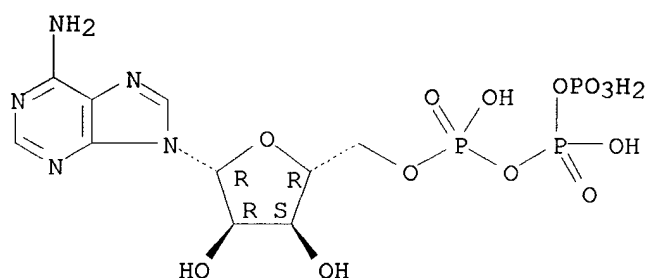
LA English

AB Nucleotides applied to the labellar chemosensory hair of the fleshfly, *B. peregrina*, stimulated the **taste** receptor cells. ADP evoked a large response of the sugar receptor cell (sugar response) and GDP evoked a large response of the salt receptor cell (salt response), but the salt response to ADP and the sugar response to GDP were relatively small. While the sugar response to ADP was independent over a wide range, pH 5-9, the salt responses to GDP and ADP were **inhibited** at neutral and alk. pHs, even though they elicited a marked salt response at pH 5-6. Only adenine nucleotides (ADP, AMP, ATP) could stimulate the sugar receptor cell, with an order of stimulating effectiveness of ADP > >AMP .gtoreq. ATP. However, the salt receptor cell could respond significantly not only to GDP but various nucleoside 5'-diphosphates, nucleoside

5'-monophosphates, cyclic nucleotides, and thiamin diphosphate. These results clearly suggest that the specificity of the receptor site reacting with nucleotide in the sugar receptor cell is very different from that in the salt receptor cell.

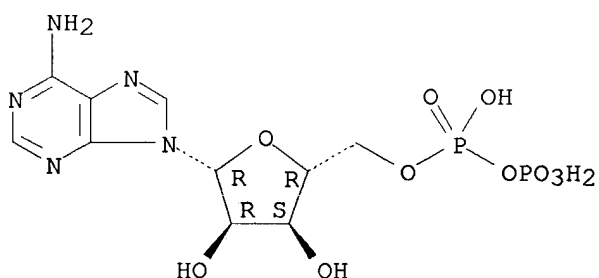
IT 56-65-5, 5'-ATP, biological studies 58-64-0, 5'-ADP, biological studies 58-98-0, 5'-UDP, biological studies 60-92-4, Cyclic AMP 61-19-8, 5'-AMP, biological studies 63-38-7, 5'-CDP 85-32-5, 5'-GMP 86-01-1, 5'-GTP 146-91-8, 5'-GDP 7665-99-8, Cyclic GMP  
 RL: BAC (Biological activity or effector, except adverse); BIOL (Biological study)  
 (multiple receptor sites for nucleotide reception in labellar taste receptor cells of fleshflies)  
 RN 56-65-5 HCAPLUS  
 CN Adenosine 5'-(tetrahydrogen triphosphate) (8CI, 9CI) (CA INDEX NAME)

Absolute stereochemistry.



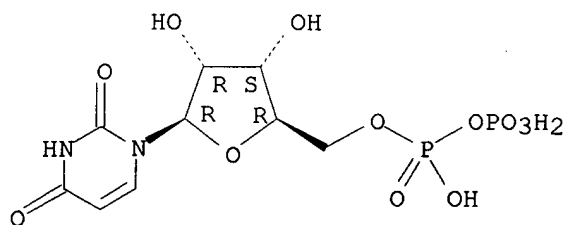
RN 58-64-0 HCAPLUS  
 CN Adenosine 5'-(trihydrogen diphosphate) (9CI) (CA INDEX NAME)

Absolute stereochemistry.



RN 58-98-0 HCAPLUS  
 CN Uridine 5'-(trihydrogen diphosphate) (9CI) (CA INDEX NAME)

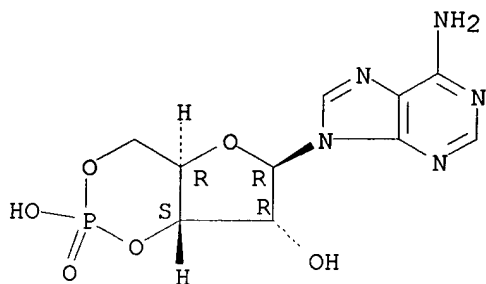
Absolute stereochemistry.



RN 60-92-4 HCAPLUS

CN Adenosine, cyclic 3',5'-(hydrogen phosphate) (8CI, 9CI) (CA INDEX NAME)

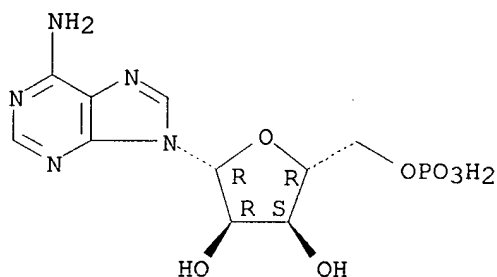
Absolute stereochemistry.



RN 61-19-8 HCAPLUS

CN 5'-Adenylic acid (8CI, 9CI) (CA INDEX NAME)

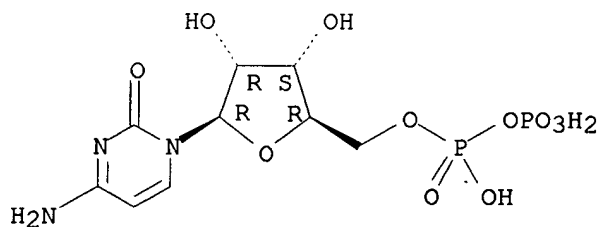
Absolute stereochemistry.

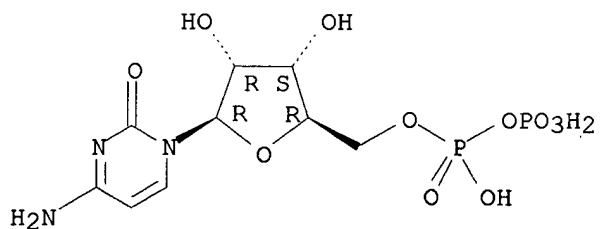


RN 63-38-7 HCAPLUS

CN Cytidine 5'-(trihydrogen diphosphate) (9CI) (CA INDEX NAME)

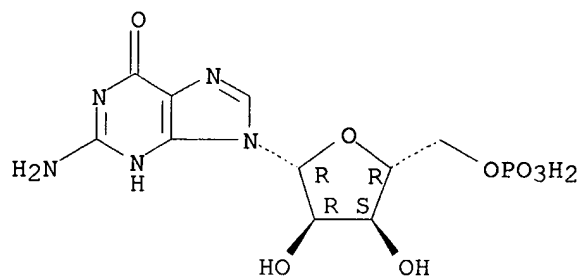
Absolute stereochemistry.





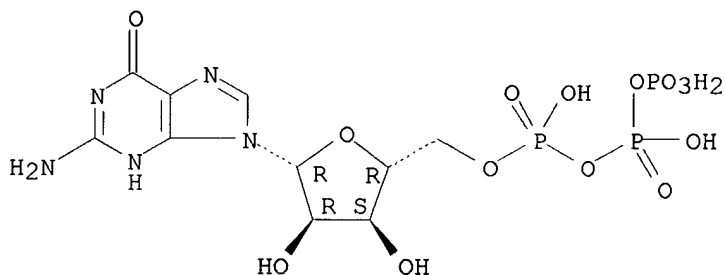
RN 85-32-5 HCAPLUS  
 CN 5'-Guanylic acid (8CI, 9CI) (CA INDEX NAME)

Absolute stereochemistry.



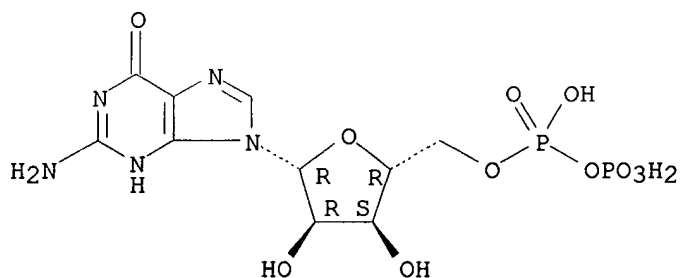
RN 86-01-1 HCAPLUS  
 CN Guanosine 5'-(tetrahydrogen triphosphate) (8CI, 9CI) (CA INDEX NAME)

Absolute stereochemistry.



RN 146-91-8 HCAPLUS  
 CN Guanosine 5'-(trihydrogen diphosphate) (9CI) (CA INDEX NAME)

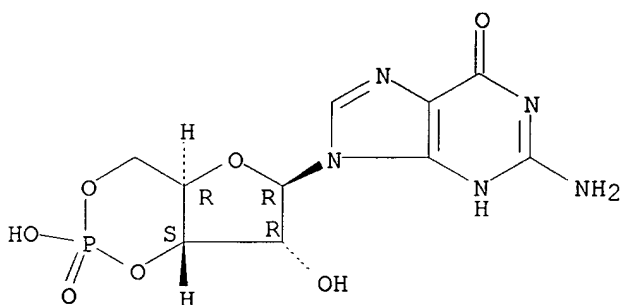
Absolute stereochemistry.



RN 7665-99-8 HCAPLUS

CN Guanosine, cyclic 3',5'-(hydrogen phosphate) (8CI, 9CI) (CA INDEX NAME)

Absolute stereochemistry.



RE.CNT 23 THERE ARE 23 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L41 ANSWER 16 OF 75 HCAPLUS COPYRIGHT 2002 ACS

AN 1999:121941 HCAPLUS

DN 130:310901

TI Taste compounds and reappearance of functional flavoring substances from low-utilized shellfishes

AU Oh, Kwang-Soo; Heu, Min-Soo; Park, Hee-Yul

CS Department of Marine Food Science and Technology, Gyeongsang National University, Tongyeong, 650-160, S. Korea

SO Han'guk Susan Hakhoechi (1998), 31(6), 799-805  
CODEN: HSHKAW; ISSN: 0374-8111

PB Korean Fisheries Society

DT Journal

LA English

AB In present paper, we examd. the **flavor** constituents and functionality of 2 stage enzyme hydrolyzates (TSEH) of purplish clam and oyster, and also examd. reappearance of oyster **flavors** through reparation of individual **flavor** constituents. Total free amino acid contents in TSEH was 1943.0 mg% for purplish clam and 5066.2 mg% for oyster, resp. Major free amino acids in purplish clam exts. were taurine, glutamic acid, glycine, alanine, lysine and arginine, and in oyster exts. were taurine, asparagine, glutamic acid, valine, leucine, alanine, lysine and arginine. As for nucleotides and related compds., AMP was the principal component though small amts. in TSEH of purplish clam and oyster, and also contents of TMAO, total creatinine, and betaine were



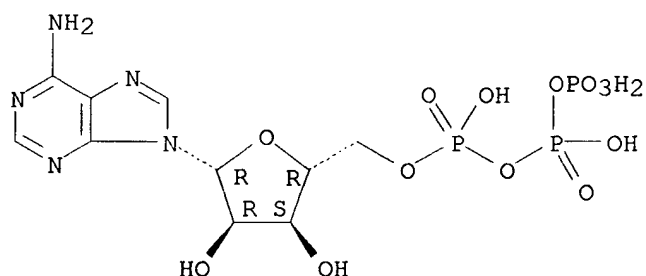
41.2, 35.9 and 220.9 mg% for the purplish clam and 3.51, 33.4 and 380.9 mg% the oyster, resp. The major inorg. ions in TSEH of both samples were Na, K, P, Cl and PO<sub>4</sub>, and the major non-volatile org. acid was succinic acid. The TSEH of purplish clam and oyster revealed very higher **inhibition** effect (84.1 and 77.0%) in ACE **inhibition** than that (0 .apprx. 44.7%) of water and autolytic ext. A synthetic oyster ext., prepd. from pure chems. on the basis of the anal. data on the TSEH, satisfactorily reproduced the **taste** of the natural ext. except for a slight lack of mildness and odor. From the omission test, the major **taste** compds. of oyster ext. were free amino acid and inorg. ions. The quaternary ammonium bases, nucleotides and related compds. seemed to act an auxiliary role in **taste**.

IT 56-65-5, 5'-ATP, biological studies 58-64-0, 5'-ADP, biological studies 61-19-8, 5'-AMP, biological studies  
 RL: BAC (Biological activity or effector, except adverse); BIOL (Biological study)  
 (taste compds. and reappearance of functional flavoring substances from low-utilized shellfishes)

RN 56-65-5 HCAPLUS

CN Adenosine 5'-(tetrahydrogen triphosphate) (8CI, 9CI) (CA INDEX NAME)

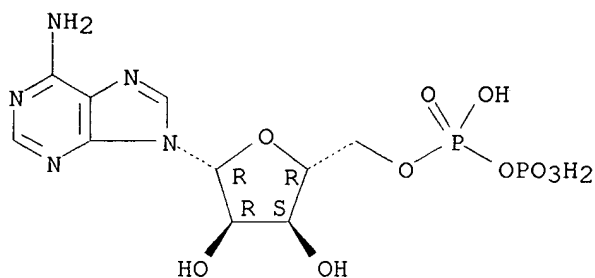
Absolute stereochemistry.



RN 58-64-0 HCAPLUS

CN Adenosine 5'-(trihydrogen diphosphate) (9CI) (CA INDEX NAME)

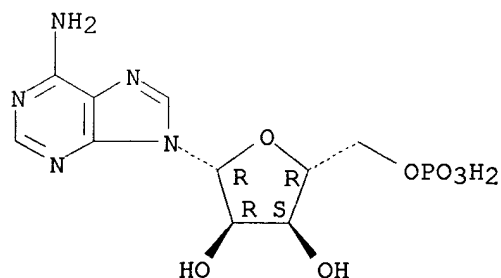
Absolute stereochemistry.



RN 61-19-8 HCAPLUS

CN 5'-Adenylic acid (8CI, 9CI) (CA INDEX NAME)

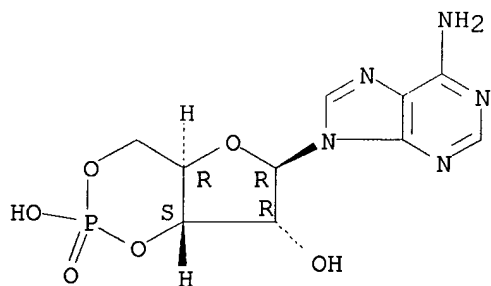
Absolute stereochemistry.



RE.CNT 11 THERE ARE 11 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L41 ANSWER 17 OF 75 HCAPLUS COPYRIGHT 2002 ACS  
AN 1999:69107 HCAPLUS  
DN 130:279554  
TI Molecular and physiological evidence for glutamate (Umami) taste transduction via a G protein-coupled receptor  
AU Chaudhari, Nirupa; Roper, Stephen D.  
CS Department of Physiology and Biophysics, University of Miami School of Medicine, Miami, FL, 33101, USA  
SO Ann. N. Y. Acad. Sci. (1998), 855(Olfaction and Taste XII), 398-406  
CODEN: ANYAA9; ISSN: 0077-8923  
PB New York Academy of Sciences  
DT Journal; General Review  
LA English  
AB A review with 32 refs. Recent mol. analyses have demonstrated that a metabotropic glutamate receptor, mGluR4, is expressed in **taste** buds from rat circumvallate and foliate papillae. Behavioral studies demonstrated that L(+)-2-amino-4-phosphonobutyric acid (L-AP4), an agonist for mGluR4 and related receptors, mimics the **taste** of monosodium glutamate (MSG) in rats. mGluR4 is known to signal through **inhibition** of the cyclic adenosine-5',3' -monophosphate (cAMP) cascade. Circumvallate and foliate **taste** buds exhibit decreases of cAMP levels following stimulation with MSG, and the response is potentiated by 5'-inosine monophosphate, suggesting that it is related to umami **taste**. Further, expts. on mice with the mGluR4 gene knocked out support the interpretation that mGluR4 is a key component in glutamate **taste**. Glutamate may also stimulate **taste** buds through an ionotropic receptor pathway. In patch-clamp studies, glutamate evokes two types of currents, similar to those elicited by N-methyl-D-aspartate (NMDA) and L-AP4. We speculate upon the significance of two glutamate receptor pathways in **taste** buds.  
IT 60-92-4, CAMP  
RL: BOC (Biological occurrence); BPR (Biological process); BIOL (Biological study); OCCU (Occurrence); PROC (Process)  
(mol. and physiol. evidence for glutamate (Umami) taste transduction via G protein-coupled receptor)  
RN 60-92-4 HCAPLUS  
CN Adenosine, cyclic 3',5'-(hydrogen phosphate) (8CI, 9CI) (CA INDEX NAME)

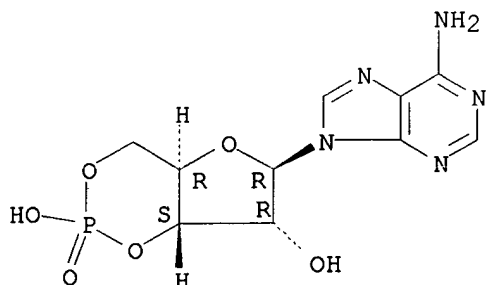
Absolute stereochemistry.



RE.CNT 32 THERE ARE 32 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L41 ANSWER 18 OF 75 HCAPLUS COPYRIGHT 2002 ACS  
AN 1998:754530 HCAPLUS  
DN 130:122500  
TI Pigment-dispersing action of prolactin in fish xanthophores and erythrophores: intracellular signaling system  
AU Goto, M.; Oshima, N.  
CS Department of Biomolecular Science, Faculty of Science, Toho University, Funabashi, Japan  
SO Adv. Comp. Endocrinol., Proc. Int. Congr. Comp. Endocrinol., 13th (1997), Volume 2, 995-998. Editor(s): Kawashima, Seiichiro; Kikuyama, Sakae. Publisher: Monduzzi Editore, Bologna, Italy. CODEN: 66ZWA3  
DT Conference  
LA English  
AB Erythrophores and xanthophores of teleost fish respond to prolactin (PRL) by pigment dispersion. Using these pigment cells from the rose **bitterling** and paradise goby, we have examd. the possible signal transduction of PRL. In the presence of Li+, known as an **inhibitor** of adenylate cyclase, pigment dispersion by 100 nM ovine PRL (oPRL) was **inhibited** in a dose-dependent manner. A specific **inhibitor** of protein kinase A (PKA), H-89, also **inhibited** the oPRL-induced dispersion of pigment, whereas H-85, the weaker antagonist of PKA, did not. From these results, it is suggested that cAMP may be the intracellular second messenger in the pigment-dispersing action of PRL. Probably, PKA activated by an increase in the concn. of cAMP accelerates the phosphorylation of target protein(s), resulting in pigment dispersion.  
IT **60-92-4, CAMP**  
RL: BAC (Biological activity or effector, except adverse); BPR (Biological process); MFM (Metabolic formation); BIOL (Biological study); FORM (Formation, nonpreparative); PROC (Process)  
(prolactin pigment-dispersing signaling in fish xanthophores and erythrophores)  
RN 60-92-4 HCAPLUS  
CN Adenosine, cyclic 3',5'-(hydrogen phosphate) (8CI, 9CI) (CA INDEX NAME)

Absolute stereochemistry.

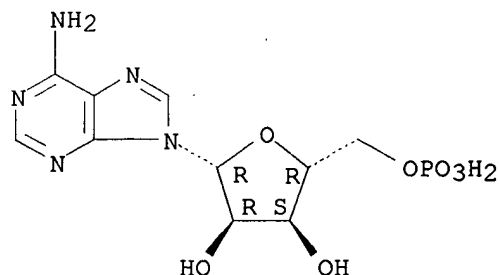


RE.CNT 2 THERE ARE 2 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L41 ANSWER 19 OF 75 HCAPLUS COPYRIGHT 2002 ACS  
AN 1998:107909 HCAPLUS  
DN 128:166668  
TI Phosphatase inhibitors and seasoning and foods using them  
IN Katsumi, Ikuo; Saito, Takahiro; Kawaguchi, Tomoaki; Yamashita, Kazuhiko  
PA Kanegafuchi Chemical Industry Co., Ltd., Japan; Yaegaki Hatsuko Giken K.  
K.  
SO Jpn. Kokai Tokkyo Koho, 8 pp.  
CODEN: JKXXAF  
DT Patent  
LA Japanese  
FAN.CNT 1

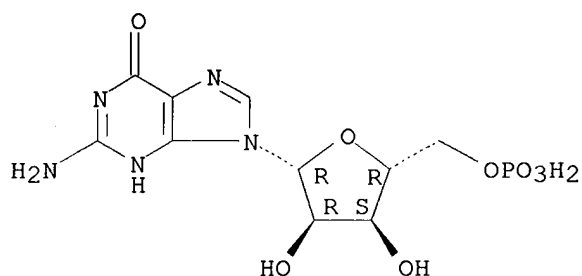
|    | PATENT NO.   | KIND | DATE     | APPLICATION NO. | DATE     |
|----|--|------|----------|-----------------|----------|
| PI | JP 10042844  | A2   | 19980217 | JP 1996-199019  | 19960729 |
| AB | The phosphatase <b>inhibitors</b> contain tea leaf vein, petiole, stalk, or their exts. Food <b>taste</b> deterioration is prevented by adding the <b>inhibitors</b> to foods such as meat, fish, or their dried products. The <b>inhibitors</b> may be added to to seasonings contg. 5'-ribonucleotide umami components. The seasonings are added to foods such as meat, vegetables, egg, pickles, fish surimi, cod roe, seasoned cod roe, salted fish products, and miso for lasting of the "umami" of 5'-ribonucleotides. The above foods seasoned with the seasonings are also claimed. An ext. of petiole and stalk of tea leaf <b>inhibited</b> degrdn. of IMP into inosine in the presence of cucumber phosphatase. |      |          |                 |          |
| IT | <b>61-19-8</b> , 5'-AMP, biological studies <b>85-32-5</b> , 5'-GMP<br>RL: BPR (Biological process); FFD (Food or feed use); BIOL (Biological study); PROC (Process); USES (Uses)<br>(seasonings contg. phosphatase inhibitors for degrdn. prevention of 5'-ribonucleotide umami ingredients)  |      |          |                 |          |
| RN | 61-19-8 HCAPLUS  |      |          |                 |          |
| CN | 5'-Adenylic acid (8CI, 9CI) (CA INDEX NAME)  |      |          |                 |          |

Absolute stereochemistry.



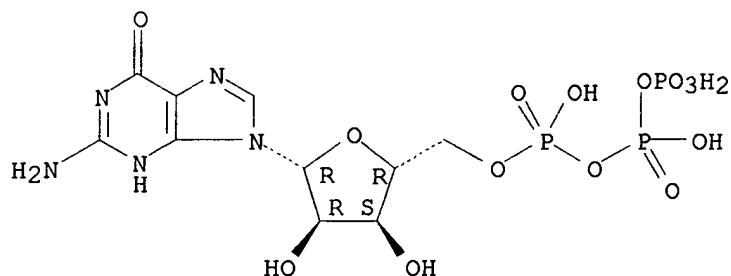
RN 85-32-5 HCAPLUS  
 CN 5'-Guanidylic acid (8CI, 9CI) (CA INDEX NAME)

Absolute stereochemistry.



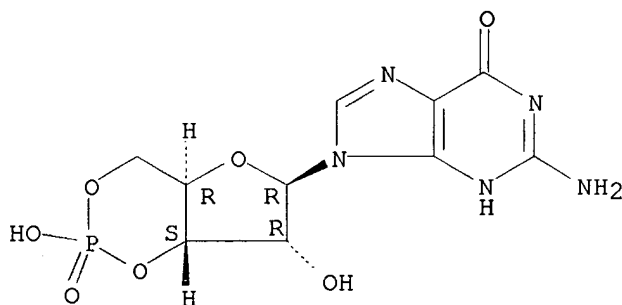
L41 ANSWER 20 OF 75 HCAPLUS COPYRIGHT 2002 ACS  
 AN 1998:21887 HCAPLUS  
 DN 128:113161  
 TI Comparison of a GTP.gamma.S-induced current and a cGMP-induced current in frog taste cells  
 AU Okada, Yukio; Fujiyama, Rie; Miyamoto, Takenori; Sato, Toshihide  
 CS Sch. Dent., Nagasaki Univ., Nagasaki, 852, Japan  
 SO Nippon Aji to Nioi Gakkaishi (1997), 4(3), 463-466  
 CODEN: NNGAEW; ISSN: 1340-4806  
 PB Nippon Aji to Nioi Gakkai  
 DT Journal  
 LA Japanese  
 AB A GTP.gamma.S-induced current and a cGMP-induced current in frog **taste** cells were recorded and compared. GTP.gamma.S (0.5 mM)-induced currents in rod cells were shown. Six cells of 16 rod cells showed 2-phase inward current. The late inward current was **inhibited** by 2 mM Cd2+. Eleven of 19 fork cells showed increase in outward current. This increase of outward current was **inhibited** by 10 mM Ba2+. The 8-Br-cGMP (1 mM)-induced inward current in rod cells were also demonstrated.  
 IT **86-01-1**, 5'-GTP **7665-99-8**, CGMP  
 RL: BAC (Biological activity or effector, except adverse); BIOL (Biological study)  
 (GTP.gamma.S-induced current and cGMP-induced current in frog taste cells)  
 RN 86-01-1 HCAPLUS  
 CN Guanosine 5'-(tetrahydrogen triphosphate) (8CI, 9CI) (CA INDEX NAME)

Absolute stereochemistry.



RN 7665-99-8 HCAPLUS  
 CN Guanosine, cyclic 3',5'-(hydrogen phosphate) (8CI, 9CI) (CA INDEX NAME)

Absolute stereochemistry.



L41 ANSWER 21 OF 75 HCAPLUS COPYRIGHT 2002 ACS  
 AN 1997:436297 HCAPLUS  
 DN 127:174323  
 TI cAMP and forskolin **inhibit** potassium currents in rat  
**taste** receptor cells by different mechanisms  
 AU Herness, M. Scott; Sun, Xiao-Dong; Chen, Yushe  
 CS Indiana Univ. Sch. Med., Center Medical Education, Ball State Univ.,  
 Muncie, IN, 47306, USA  
 SO Am. J. Physiol. (1997), 272(6, Pt. 1), C2005-C2018  
 CODEN: AJPHAP; ISSN: 0002-9513  
 PB American Physiological Society  
 DT Journal  
 LA English  
 AB In gustatory transduction, adenosine 3',5'-cyclic monophosphate (cAMP) has  
 been suggested to close potassium channels when elevated by sweet stimuli  
 or to open cAMP-gated cation channels when depressed by **bitter**  
 stimuli. These expts. examine the effect of cAMP on whole cell currents  
 from posterior **taste** receptor cells with std. patch-clamp  
 techniques. Elevating cytosolic cAMP by pipet administration,  
 membrane-permeant analogs [8-(4-chlorophenylthio)-cAMP (CPT-cAMP) and  
 dibutyryl-cAMP], or by phosphodiesterase **inhibition**  
 [3-isobutyl-1-methylxanthine (IBMX)] produced poorly reversible  
**inhibitions** of outward potassium currents by up to 33%.

Unexpectedly, middle to high concns. of forskolin ( $>5 \mu\text{M}$ ) profoundly and reversibly **inhibited** these currents (95%) with greatly accelerated inactivation kinetics. 1,9-Dideoxyforskolin, an ineffective activator of adenylate cyclase, was similarly potent. Kinase **inhibitors** effectively blocked the effects of cAMP elevations produced by IBMX or CPT-cAMP but did not block these forskolin actions. However, at low concns. ( $5 \mu\text{M}$ ), forskolin reduced potassium currents in a phosphorylation-dependent manner. Collectively, these data suggest that cAMP produces a phosphorylation-dependent **inhibition** of outward potassium currents but that forskolin's actions are independent of cAMP or phosphorylation except at low concn. CAMP was also effective in altering the waveform of the gustatory action potential, implying it may modify transmission of gustatory information to the brain.

IT 60-92-4, CAMP

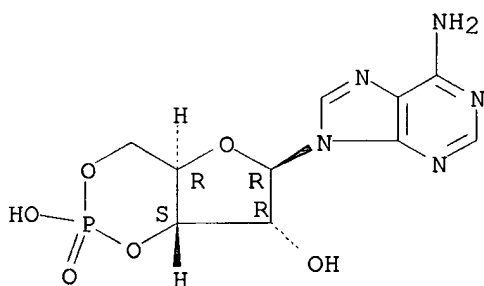
RL: BAC (Biological activity or effector, except adverse); BIOL (Biological study)

(cAMP reduces potassium currents in rat taste receptor cells by different mechanisms)

RN 60-92-4 HCAPLUS

CN Adenosine, cyclic 3',5'-(hydrogen phosphate) (8CI, 9CI) (CA INDEX NAME)

Absolute stereochemistry.



L41 ANSWER 22 OF 75 HCAPLUS COPYRIGHT 2002 ACS

AN 1997:321747 HCAPLUS

DN 127:47967

TI Bitter taste transduction of denatonium in the mudpuppy *Necturus maculosus*

AU Ogura, Tatsuya; Mackay-Sim, Alan; Kinnamon, Sue C.

CS Department Anatomy Neurobiology, Colorado State University, Fort Collins, CO, 80523, USA

SO J. Neurosci. (1997), 17(10), 3580-3587

CODEN: JNRSDS; ISSN: 0270-6474

PB Society for Neuroscience

DT Journal

LA English

AB **Bitter** substances are a structurally diverse group of compds. that appear to act via several transduction mechanisms. The

**bitter-tasting** denatonium ion has been proposed to act via two different G-protein-regulated pathways, one involving inositol 1,4,5-triphosphate and raised intracellular calcium levels, the other involving phosphodiesterase and membrane depolarization via a cyclic nucleotide-suppressible cation channel. The aim of the present study was to examine these transduction mechanisms in **taste** cells of the mudpuppy *Necturus maculosus* by calcium-imaging and whole-cell recording.

Denatonium benzoate increased intracellular calcium levels and induced an outward current independently of extracellular calcium. The denatonium-induced increase in intracellular calcium was **inhibited** by U73122, an **inhibitor** of phospholipase C, and by thapsigargin, an **inhibitor** of calcium transport into intracellular stores. The denatonium-induced outward current was blocked by GDP-.beta.-S, a blocker of G-protein activation. Neither resting nor denatonium-induced intracellular calcium levels were affected by **inhibition** of phosphodiesterase (with IBMX) or adenylate cyclase (with SQ22536) or by raising intracellular cyclic nucleotides directly (with cell permeant analogs). The authors' results support the hypothesis that denatonium is transduced via a G-protein cascade involving phospholipase C, inositol 1,4,5-trisphosphate, and raised intracellular calcium levels. The authors' results do not support the hypothesis that denatonium is transduced via phosphodiesterase and cAMP.

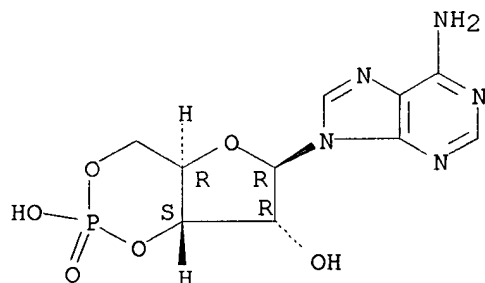
IT 60-92-4, CAMP

RL: BSU (Biological study, unclassified); BIOL (Biological study)  
(bitter taste transduction of denatonium in the mudpuppy Necturus maculosus)

RN 60-92-4 HCAPLUS

CN Adenosine, cyclic 3',5'-(hydrogen phosphate) (8CI, 9CI) (CA INDEX NAME)

Absolute stereochemistry.



L41 ANSWER 23 OF 75 HCAPLUS COPYRIGHT 2002 ACS

AN 1997:287076 HCAPLUS

DN 127:15573

TI Isolation and amino acid sequence of flavostatin, a novel disintegrin from the venom of Trimeresurus flavoviridis

AU Maruyama, Kazunori; Kawasaki, Tomihisa; Sakai, Yumiko; Taniuchi, Yuta; Shimizu, Minoru; Kawashima, Hiroyuki; Takenaka, Toichi

CS Inst. Drug Discovery Research, Yamanouchi Pharmaceutical Co., Ltd., Tsukuba, 305, Japan

SO Peptides (Tarrytown, N. Y.) (1997), 18(1), 73-78  
CODEN: PPTDD5; ISSN: 0196-9781

PB Elsevier

DT Journal

LA English

AB Flavostatin, a novel disintegrin purified from the venom of Trimeresurus flavoviridis, consists of 68 amino acids, including an Arg-Gly-Asp sequence and 12 Cys residues at positions highly conserved among disintegrins. The N-terminal sequence of flavostatin was identical to those of triflavin and **flavoridin**, previously reported disintegrins from the Trimeresurus **flavoridis** venom.



Differences among the C-terminal sequences of these disintegrins are considered to affect their biol. potencies. Isolated flavostatin **inhibited** ADP, collagen, and thrombin receptor agonist peptide-induced platelet aggregation in human platelet-rich plasma with an IC50 range of 59 to 98 nM. Contrary to expectations, these values were similar to those for triflavin.

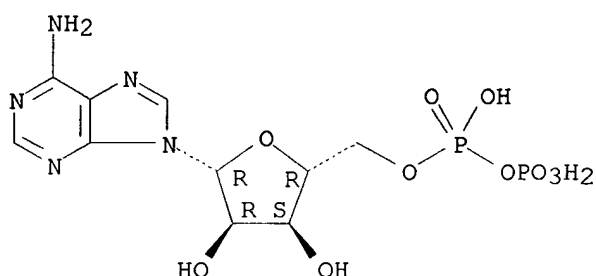
IT **58-64-0**, 5'-ADP, biological studies

RL: BAC (Biological activity or effector, except adverse); BUU (Biological use, unclassified); BIOL (Biological study); USES (Uses)  
(flavostatin from Trimeresurus flavoviridis venom isolation and sequence and platelet aggregation-inhibiting activity)

RN 58-64-0 HCAPLUS

CN Adenosine 5'-(trihydrogen diphosphate) (9CI) (CA INDEX NAME)

Absolute stereochemistry.



L41 ANSWER 24 OF 75 HCAPLUS COPYRIGHT 2002 ACS

AN 1997:66425 HCAPLUS

DN 126:115936

TI Vasopressin modulates membrane properties of taste cells isolated from bullfrogs

AU Okada, Yukio; Fujiyama, Rie; Miyamoto, Takenori; Sato, Toshihide

CS School Dentistry, Nagasaki University, Nagasaki, 852, Japan

SO Chem. Senses (1996), 21(6), 739-745

CODEN: CHSED8; ISSN: 0379-864X

PB Oxford University Press

DT Journal

LA English

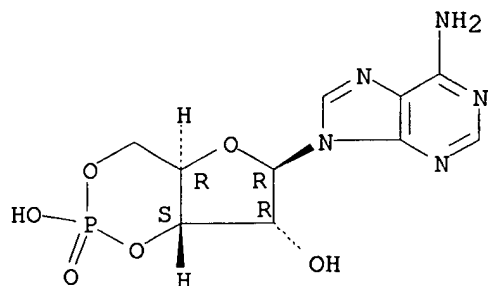
AB The effect of arginine vasopressin (AVP) on the membrane properties was analyzed in isolated bullfrog **taste** cells using a perforated whole-cell patch-clamp technique. AVP (100 nM) induced three kinds of responses in rod-type **taste** cells: appearance of inward current, **inhibition** of voltage ramp-induced outward current and enhancement of the outward current. The Ca<sup>2+</sup>-ionophore ionomycin (3 .mu.M) also induced inward current in **taste** cells. A membrane-permeable cAMP analog, 8-CPT-cAMP (0.3 mM) **inhibited** voltage ramp-induced outward current in some rod cells, but enhanced the current in other rod cells. The results suggest that AVP may increase either intracellular Ca<sup>2+</sup> level or cAMP level in **taste** cells, modulating the membrane excitability.

IT **60-92-4**, CAMP

RL: BPR (Biological process); BIOL (Biological study); PROC (Process)  
(vasopressin modulates membrane properties of taste cells from bullfrogs)

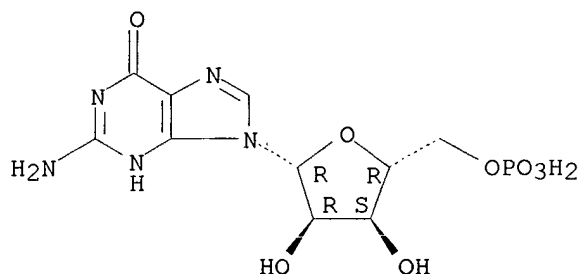
RN 60-92-4 HCAPLUS  
 CN Adenosine, cyclic 3',5'-(hydrogen phosphate) (8CI, 9CI) (CA INDEX NAME)

Absolute stereochemistry.



L41 ANSWER 25 OF 75 HCAPLUS COPYRIGHT 2002 ACS  
 AN 1996:673862 HCAPLUS  
 DN 126:101886  
 TI Modification of vertebrate taste cell responses by GMP  
 AU Miyamoto, Takenori; Sato, Toshihide  
 CS Sch. Dent., Nagasaki Univ., Nagasaki, 852, Japan  
 SO Nippon Aji to Nioi Gakkaishi (1996), 3(2), 133-136  
 CODEN: NNGAEW; ISSN: 1340-4806  
 PB Nippon Aji to Nioi Gakkai  
 DT Journal; General Review  
 LA Japanese  
 AB A review with 12 refs. on **inhibitory** effects of GMP on salt **taste** responses in the frog, on recording methods for sugar **taste** responses in mice, on 2 pathways of sweet **taste** transduction, and on enhancement of **taste** responses to MSG by GMP in mice.  
 IT 85-32-5, 5'-GMP  
 RL: BPR (Biological process); BIOL (Biological study); PROC (Process)  
 (modification of vertebrate taste cell responses by GMP)  
 RN 85-32-5 HCAPLUS  
 CN 5'-Guanylic acid (8CI, 9CI) (CA INDEX NAME)

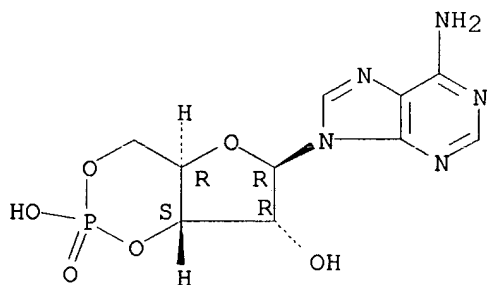
Absolute stereochemistry.



L41 ANSWER 26 OF 75 HCAPLUS COPYRIGHT 2002 ACS  
 AN 1996:370811 HCAPLUS

DN 125:30894  
 TI Dual pathways for sweet taste transduction in isolated gerbil taste cells: cAMP and IP3 mediated mechanisms  
 AU Uchida, Yoshinori  
 CS Sch. Dentistry, Nagasaki Univ., Nagasaki, 852, Japan  
 SO Shika Kiso Igakkai Zasshi (1996), 38(2), 226-234  
 CODEN: SHKKAN; ISSN: 0385-0137  
 DT Journal  
 LA Japanese  
 AB Mechanisms of sweet **taste** transduction in gerbil **taste** cells were examd. using the conventional whole-cell patch-clamp technique. Outward K<sup>+</sup> currents of the **taste** cell induced by depolarizing elec. pulses were reduced by 10 mM Na-saccharin, but were enhanced by amino acid sweeteners of 10 mM D-tryptophan. The outward K<sup>+</sup> current was also enhanced by external application of Ca<sup>2+</sup>-ionophore, 5 .mu.M ionomycin and intracellular application of 5 .mu.M IP3 (inositol-1,4,5-trisphosphate). These results suggest that the sweet **taste** transduction mechanism for Na-saccharin is concerned with an increase of the intracellular cAMP level, while that for D-tryptophan is concerned with an increase of the intracellular IP3 level causing Ca<sup>2+</sup> release from the internal stores. Gurmarin, an **inhibitor** of sweet **taste**, antagonized the suppressive effect of Na saccharin on outward K<sup>+</sup> currents, but did not affect the enhancing effect of D-tryptophan on outward K<sup>+</sup> currents. The results from treatment with gurmarin suggest that the receptor site for Na-saccharin is different from that for D-tryptophan.  
 IT 60-92-4, CAMP  
 RL: BAC (Biological activity or effector, except adverse); BIOL (Biological study)  
 (cAMP- and IP3-mediated mechanisms for sweet taste transduction in isolated taste cells)  
 RN 60-92-4 HCAPLUS  
 CN Adenosine, cyclic 3',5'-(hydrogen phosphate) (8CI, 9CI) (CA INDEX NAME)

Absolute stereochemistry.



L41 ANSWER 27 OF 75 HCAPLUS COPYRIGHT 2002 ACS  
 AN 1996:88743 HCAPLUS  
 DN 124:171691  
 TI Changes in IP3 and cytosolic Ca<sup>2+</sup> in response to sugars and non-sugar sweeteners in transduction of sweet taste in the rat  
 AU Bernhardt, Samuel J.; Naim, Michael; Zehavi, Uri; Lindemann, Bernd  
 CS Dep. Biochem., Food Science and Nutrition, Hebrew Univ. Jerusalem,

Rehovot, 76-100, Israel

SO J. Physiol. (London) (1996), 490(2), 325-36  
CODEN: JPHYA7; ISSN: 0022-3751

DT Journal

LA English

AB The transduction pathways of sweet-sensitive cells in rat circumballate (CV) **taste** buds were investigated with assays for inositol 1,4,5-trisphosphate (IP3) and with Ca<sup>2+</sup> imaging. Stimulation with the non-sugar sweeteners SC-45647 and saccharin rapidly increased the cellular content of IP3 by 400 pmol (mg protein)<sup>-1</sup>, while sucrose had a much smaller effect on IP3. As shown previously, sucrose, but not saccharin, increased the content of cyclic adenosine monophosphate (cAMP) of this prepn. Stimulation of isolated CV **taste** buds with SC-45647 increased the cytosolic Ca<sup>2+</sup> concn. ([Ca<sup>2+</sup>]<sub>i</sub>) by 56.7 ± 3.2 nM (n = 181). Due to the non-confocality of the measuring system, these concns. are underestimates. The increase in [Ca<sup>2+</sup>]<sub>i</sub> did not require the presence of extracellular Ca<sup>2+</sup>, suggesting that the Ca<sup>2+</sup> release was from intracellular stores. Individual cells responding to the non-sugar sweeteners with Ca<sup>2+</sup> release also responded to sucrose and to forskolin with an increase in [Ca<sup>2+</sup>]<sub>i</sub>. Such cells did not respond to the **bitter tastant** denatonium chloride. Responses to sucrose were abolished by lowering the Ca<sup>2+</sup> concn. of the stimulus soln., indicating Ca<sup>2+</sup> uptake from the extracellular medium. The responses of sweet-sensitive cells to forskolin were also abolished when Ca<sup>2+</sup> ions were omitted from the stimulus soln. They were partially **inhibited** by the presence of Co<sup>2+</sup>, Ni<sup>2+</sup>, D600 (methoxyverapamil) and amiloride, indicating multiple pathways of Ca<sup>2+</sup> uptake activated by cAMP. In conclusion, a sweet-sensitive cell of the rat responds to sucrose with an increase in cAMP and Ca<sup>2+</sup> uptake, but to non-sugar sweeteners with an increase in IP3 and Ca<sup>2+</sup> release. The increase in [Ca<sup>2+</sup>]<sub>i</sub>, common to both pathways, is presumably required for synaptic exocytosis and for signal termination.

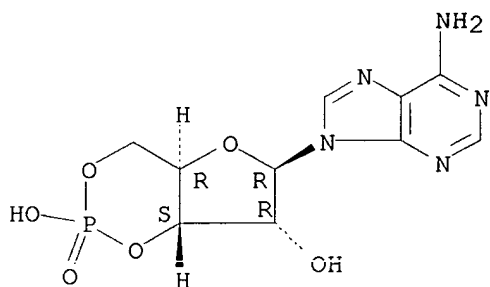
IT 60-92-4, CAMP

RL: BPR (Biological process); BIOL (Biological study); PROC (Process)  
(inositol trisphosphate and cytosolic calcium in response to sugars and non-sugar sweeteners in transduction of sweet taste in the rat)

RN 60-92-4 HCAPLUS

CN Adenosine, cyclic 3',5'-(hydrogen phosphate) (8CI, 9CI) (CA INDEX NAME)

Absolute stereochemistry.



L41 ANSWER 28 OF 75 HCAPLUS COPYRIGHT 2002 ACS

AN 1995:943433 HCAPLUS

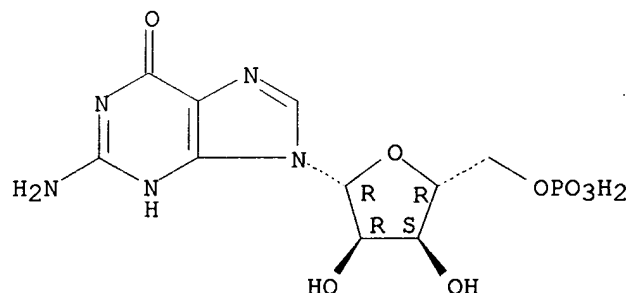
DN 124:9333

TI Preparation of lithium salt of flavor substances as drugs  
 IN Shimizu, Chuichi; Takagishi, Kyokazu; Kaneko, Tatsuhiko  
 PA Takeda Chemical Industries Ltd, Japan  
 SO Jpn. Kokai Tokkyo Koho, 8 pp.  
 CODEN: JKXXAF

DT Patent  
 LA Japanese  
 FAN.CNT 1

|    | PATENT NO.  | KIND | DATE     | APPLICATION NO. | DATE     |
|----|---|------|----------|-----------------|----------|
| PI | JP 07138281   | A2   | 19950530 | JP 1993-283096  | 19931112 |
| AB | <p>5'-Inosinic acid lithium salt (I) is prepd. An antihypertensive, which is effective, nontoxic, and safely administered, contains I. Thus, 62.8 g POCl<sub>3</sub> (2.75 equiv of inosine) was added to 458.7 g tri-Et phosphate (16.9 equiv of inosine) with stirring and after cooling to 5.degree., 2.95 g H<sub>2</sub>O (1.1 equiv) was added dropwise, followed by adding inosine in portions, and the mixt. was allowed to react at 9.degree. for 2.5 h and at 5.degree. for 30 min. H<sub>2</sub>O (700 mL) was cooled to 0.degree., gradually added to the resulting reaction mixt., stirred at 5.degree. for 1 h, and extd. with .apprx.1 L toluene seven times to give an aq. soln. which was bubbled with air for 15 min to remove toluene and applied to a column packed with 700 mL coconut shell activated charcoal (LH2C carbon). The column was washed with 1,170 mL H<sub>2</sub>O and eluted with 1,440 mL 3.5% aq. LiOH, collecting the effluent by monitoring the absorbency. The obtained soln. was made pH 9.0 with HCl, filtered to remove a formed ppt., passed to a column of K-1 carbon (ZnCl<sub>2</sub> charcoal from saw dust), and the effluent was recovered except the initial 30 mL. The column was washed with 290 mL H<sub>2</sub>O and the combined effluent (1,070 mL) was concd. to 160 mL at 60.degree. under the reduced to pressure on a water bath, filtered since it turned turbid (white), cooled to 25.degree., left to stand at 25.degree., filtered to give, after washing the resulting crystal with EtOH and drying, 61.8 % I. I was administered to spontaneously hypertensive rats at 30 mg/kg and the blood pressure was lowered by 23, 17, and 18% after 1, 2, and 3 h, resp. The antihypertensive effect was comparable to that of reserpine at the dosage of 30 mg/kg p.o. Other lithium salts prepd. were inosine Li salt (antiulcer agent), guanosine Li salt (antiulcer agent), lithium 5'-guanylate (improver for lipid metab. and anticholesteremic), lithium glutamate (antiinflammatory, analgesic agent, remedy for anoxia, blood platelet aggregation inhibitor), and D-glucosaccharoascorbic acid dilithium salt (antiallergic, analgesic, antiinflammatory agent, and sedative).</p> |      |          |                 |          |
| IT | <p><b>170784-49-3P</b>, Lithium 5'-guanylate<br/>         RL: BAC (Biological activity or effector, except adverse); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)<br/>         (improver for lipid metab.; prepn. of lithium salt of flavor substances as drugs)</p>  |      |          |                 |          |
| RN | 170784-49-3 HCAPLUS   |      |          |                 |          |
| CN | 5'-Guanylic acid, lithium salt (9CI) (CA INDEX NAME)  |      |          |                 |          |

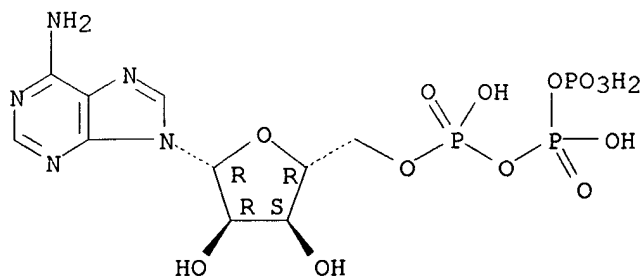
Absolute stereochemistry.



●x Li

L41 ANSWER 29 OF 75 HCAPLUS COPYRIGHT 2002 ACS  
 AN 1995:778836 HCAPLUS  
 DN 123:284058  
 TI Components of off-flavor in the muscle of American jumbo squid  
 AU Yamanaka, Hideaki; Matsumoto, Misuzu; Hatae, Keiko; Nakaya, Hajime  
 CS Dep. of Food Science and Technology, Tokyo Univ. of Fisheries, Tokyo, 108, Japan  
 SO Nippon Suisan Gakkaishi (1995), 61(4), 612-18  
 CODEN: NSUGAF; ISSN: 0021-5392  
 DT Journal  
 LA Japanese  
 AB Sensory tests and anal. on extractive components were carried out to clarify the off-flavor components in raw and boiled muscles of American jumbo squid. The results of the sensory tests indicated that strong salty, sour, **bitter**, and fishy **tastes** were characteristic to the off-flavor of American jumbo squid, and such **tastes** were the main factor of unacceptability of the raw muscle as food. Boiling of the muscle hardly improved the acceptability. Although volatile basic N (VBN) contents were very high, TMA and polyamines contents were still low, suggesting that the American jumbo squid used in the present expt. was not at the stage of decompn. The high level of VBN was primarily due to ammonia. The pH values (less than 6.7) and the amt. of chloride ion suggest the existence of ammonium chloride in the squid muscle. Therefore, the off-flavor of American jumbo squid seems to be due to the saltiness and **bitterness** of ammonium chloride. In addn., the significantly low level of free amino acids was not enough to **mask** the off-flavor of American jumbo squid.  
 IT 56-65-5, 5'-ATP, biological studies 58-64-0, 5'-ADP, biological studies 61-19-8, 5'-AMP, biological studies  
 RL: BOC (Biological occurrence); BIOL (Biological study); OCCU (Occurrence)  
 (components of off-flavor in the muscle of American jumbo squid)  
 RN 56-65-5 HCAPLUS  
 CN Adenosine 5'-(tetrahydrogen triphosphate) (8CI, 9CI) (CA INDEX NAME)

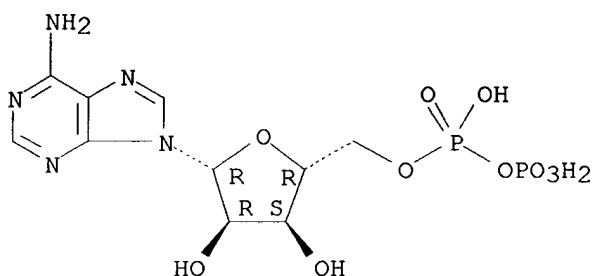
Absolute stereochemistry.



RN 58-64-0 HCAPLUS

CN Adenosine 5'-(trihydrogen diphosphate) (9CI) (CA INDEX NAME)

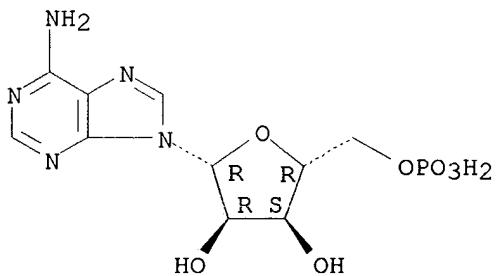
Absolute stereochemistry.



RN 61-19-8 HCAPLUS

CN 5'-Adenylic acid (8CI, 9CI) (CA INDEX NAME)

Absolute stereochemistry.



L41 ANSWER 30 OF 75 HCAPLUS COPYRIGHT 2002 ACS

AN 1995:640606 HCAPLUS

DN 123:52738

TI Role of G-protein in taste responses of the fly *Boettcherisca peregrina*

AU Koganezawa, Masayuki; Shimada, Ichiro

CS Fac. Sci., Tohoku Univ., Sendai, 980-77, Japan

SO Nippon Aji to Nioi Gakkaishi (1994), 1(3), 190-1

CODEN: NNGAEW; ISSN: 1340-4806

DT Journal

LA Japanese

AB Effects of GTP.gamma.S and GDP.beta.S on **taste** responses were investigated in the labellar chemosensillum of *B. peregrina*. The GTP.gamma.S treatment increased the responses of sugar receptor cells to fructose (Fru), glucose (Glc), L-phenylalanine (Phe), and L-valine (Val) and the responses of salt receptor cells to cAMP whereas the treatment did not affect the responses of salt receptor cells to NaCl. The GDP.beta.S treatment **inhibited** the responses of sugar receptor cells to Fru, Glc, L-Phe, and L-Val and the responses of salt receptor cells to cAMP whereas the treatment did not affect the responses of salt receptor cells to NaCl.

IT 60-92-4, CAMP

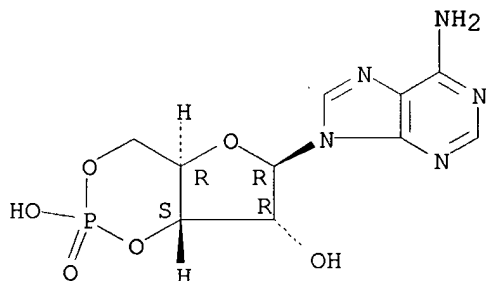
RL: BAC (Biological activity or effector, except adverse); BIOL (Biological study)

(G protein role in taste responses of fly)

RN 60-92-4 HCAPLUS

CN Adenosine, cyclic 3',5'-(hydrogen phosphate) (8CI, 9CI) (CA INDEX NAME)

Absolute stereochemistry.



L41 ANSWER 31 OF 75 HCAPLUS COPYRIGHT 2002 ACS

AN 1994:530907 HCAPLUS

DN 121:130907

TI Effects of modulators of the adenylate cyclase system on sweet electrophysiological taste responses in gerbil

AU Schiffman, Susan S.; Suggs, Mark S.; Losee, Michael L.

CS Dep. Psychiatry, Duke Univ., Durham, NC, 27706, USA

SO Pharmacol., Biochem. Behav. (1994), 48(4), 991-8

CODEN: PBBHAU; ISSN: 0091-3057

DT Journal

LA English

AB The adenylate cyclase system has been implicated in sweet **taste** transduction. The purpose of this study was to det. whether application of modulators of the adenylate cyclase system to the tongue alters sweet **taste** responses. Integrated chorda tympani (CT) recordings were made in gerbils to sweet **tastants** before and after a 4-min application of four types of modulators of the adenylate cyclase system. The four types of modulators tested were: a) NaF, a compd. that promotes disson. of GTP-binding protein; b) forskolin, a powerful stimulant of adenylate cyclase; c) 8-bromoadenosine 3':5'-cyclic monophosphate sodium salt (8BrcAMP) and N6,2'-O-dibutyryl-adenosine 3':5'-cyclic monophosphate sodium salt (DBcAMP), two membrane-permeable forms of cAMP; and d) 1-(5-isoquinolinylsulfonyl)-2-methylpiperazine dihydrochloride (H-7) and N-(2-[methylamino]ethyl)-5-isoquinolinesulfonamide dihydrochloride (H-8), which are protein kinase **inhibitors**. The sweet compds. tested



were: sucrose (30 mM and 100 mM), glucose (300 mM), fructose (300 mM), maltitol (150 mM and 300 mM), mannitol (300 mM and 500 mM), sodium saccharin (10 mM), D-tryptophan (6.5 mM), dulcin (0.88 mM, 1.75 mM, and 3.5 mM), and stevioside (0.55 mM and 1.1 mM). NaCl (30 mM and 100 mM) and KCl (300 mM and 500 mM) were used as control stimuli. The main findings were as follows. Application of NaF (20 mM) for 4 min as a rinse significantly enhanced all of the sweet compds. by at least 23%, except for 10 mM sodium saccharin and 6.5 mM D-tryptophan, while all control compds. were suppressed. NaCl (20 mM), which was used as a control for NaF, did not significantly enhance any of the responses when applied as a rinse. 8BrcAMP (1.16 mM) enhanced 30 mM sucrose by 16%, 300 mM glucose by 36%, 300 mM maltitol by 18%, and 6.5 mM D-tryptophan by 24%. DBcAMP had a minimal effect on most of the compds. tested with a 26% enhancement of 300 mM mannitol and a 17% blockage of 300 mM KCl. H-7 (300 .mu.M) enhanced 30 mM sucrose and 1.75 mM dulcin, but this may not be due to an effect on the adenylate cyclase system. H-8 (147 .mu.M) was used in a single trial with no consistent changes. These data indicate that modulation of the adenylate cyclase system can increase the intensity of some sweet **taste** responses.

IT 60-92-4, CAMP

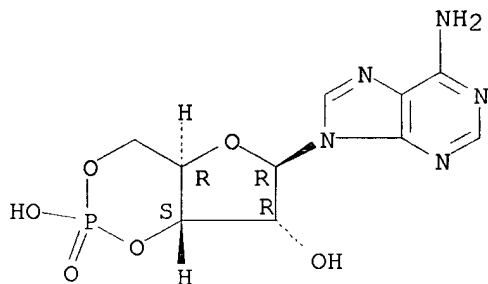
RL: BIOL (Biological study)

(sweet electrophysiol. responses of chorda tympani nerve regulation by)

RN 60-92-4 HCAPLUS

CN Adenosine, cyclic 3',5'-(hydrogen phosphate) (8CI, 9CI) (CA INDEX NAME)

Absolute stereochemistry.



L41 ANSWER 32 OF 75 HCAPLUS COPYRIGHT 2002 ACS

AN 1994:530906 HCAPLUS

DN 121:130906

TI Modulators of the adenylate cyclase system can alter electrophysiological taste responses in gerbil

AU Schiffman, S. S.; Gatlin, L. A.; Suggs, M. S.; Heiman, S. A.; Stagner, W. C.; Erickson, R. P.

CS Dep. Psychiatry, Duke Univ., Durham, NC, 27706, USA

SO Pharmacol., Biochem. Behav. (1994), 48(4), 983-90

CODEN: PBBHAU; ISSN: 0091-3057

DT Journal

LA English

AB The adenylate cyclase system has been implicated in **taste** transduction. The purpose of this study was to det. whether application of modulators of the adenylate cyclase system to the tongue alter **taste** responses. Integrated chorda tympani (CT) recordings were made in gerbils to **bitter**, sweet, salty, sour, and glutamate

**tastants** before and after a 4-min application of four types of modulators of the adenylate cyclase system. The four types of modulators tested were: (a) NaF, a compd. that promotes dissocn. of GTP binding protein; (b) forskolin, a powerful stimulant of adenylate cyclase; (c) 8-bromoadenosine 3':5'-cyclic monophosphate sodium salt (8BrcAMP) and N6,2'-O-dibutyryladenosine 3':5'-cyclic monophosphate sodium salt (DBcAMP), two membrane permeable forms of cAMP; and (d) 1-(5-isoquinolinylsulfonyl)-2-methylpiperazine dihydrochloride (H-7) and N-(2-[methylamino]ethyl)-5-isoquinolinesulfonamide dihydrochloride (H-8), which are protein kinase **inhibitors**. The **taste** compds. tested were: NaCl (30 mM), monosodium glutamate-MSG (50 mM), sucrose (30 mM), HCl (5 mM and 10 mM), KCl (300 mM), quinine HCl (30 mM), MgCl<sub>2</sub> (30 mM), erythromycin (0.7 mM and 1 mM), HCl (5 mM and 10 mM), and urea (2 M). The main findings were as follows. NaF (20 mM) significantly **inhibited** responses to **bitter** compds. up to 35% and enhanced the response to sucrose by 30%. NaCl (20 mM), used as a control for NaF, **inhibited** most responses up to 78% with no enhancement of sucrose as seen with NaF. 8BrcAMP (1.16 mM) reduced the responses to **bitter-tasting** quinine HCl, MgCl<sub>2</sub>, and erythromycin but not to urea. It also blocked the responses to KCl and HCl which have **bitter** components. There was a slight enhancement of the sucrose response. It had no significant effect on NaCl or MSG. A similar trend was found for 5 mM DBcAMP. H-7 (300 .mu.M) slightly altered responses to several stimuli. These data indicate that modulation of the adenylate cyclase system can affect the amplitude of neural responses of some **bitter** and sweet **taste** responses.

IT 60-92-4, CAMP

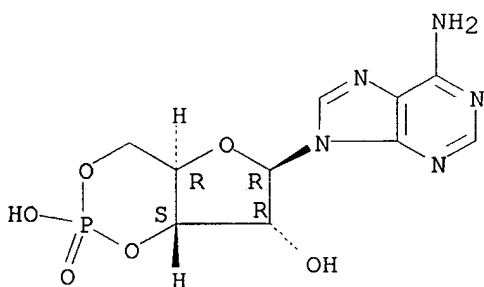
RL: BIOL (Biological study)

(modulation of, electrophysiol. taste responses in chorda tympani nerve alteration by)

RN 60-92-4 HCAPLUS

CN Adenosine, cyclic 3',5'-(hydrogen phosphate) (8CI, 9CI) (CA INDEX NAME)

Absolute stereochemistry.



L41 ANSWER 33 OF 75 HCAPLUS COPYRIGHT 2002 ACS

AN 1994:213148 HCAPLUS

DN 120:213148

TI ATP: a potent prey attractant evoking carnivory

AU Zimmer-Faust, Richard K.

CS Belle W. Baruch Inst. Mar. Biol. Coastal Res., Univ. South Carolina, Columbia, SC, 29208, USA

SO Limnol. Oceanogr. (1993), 38(6), 1271-5

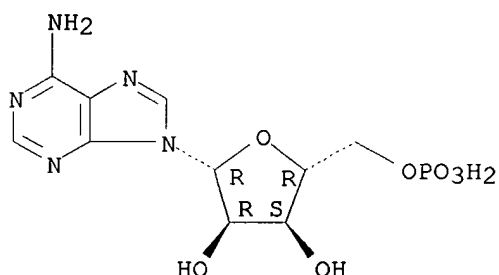
CODEN: LIOCAH; ISSN: 0024-3590

DT Journal  
LA English  
AB ATP is nearly universal as a carrier of chem. energy in metabolic pathways. This mol. is esp. abundant in metabolically active tissues like muscle but decays rapidly to AMP as cells die. Here, the author reports that ATP stimulates carnivorous feeding by the spiny lobster, *Panulirus interruptus*, while AMP **inhibits** feeding. Because AMP levels rise as ATP levels fall during initial degrdn. of animal flesh, both ATP stimulation and AMP **inhibition** act to focus foraging for live and recently killed prey. The **taste** and smell of these nucleotides therefore indicate the freshness and edibility of food resources.

IT **61-19-8**, 5'-AMP, biological studies  
RL: BIOL (Biological study)  
(feeding inhibition by, in spiny lobster)

RN 61-19-8 HCAPLUS  
CN 5'-Adenylic acid (8CI, 9CI) (CA INDEX NAME)

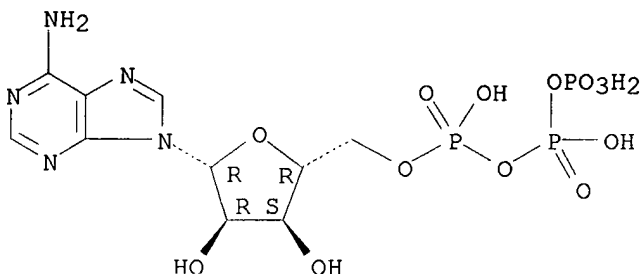
Absolute stereochemistry.



IT **56-65-5**, 5'-ATP, biological studies  
RL: BIOL (Biological study)  
(feeding stimulation by, in spiny lobster)

RN 56-65-5 HCAPLUS  
CN Adenosine 5'-(tetrahydrogen triphosphate) (8CI, 9CI) (CA INDEX NAME)

Absolute stereochemistry.

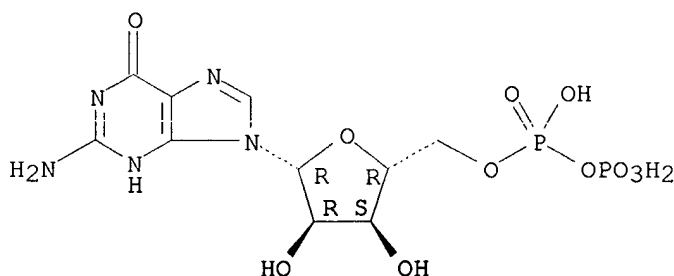


L41 ANSWER 34 OF 75 HCAPLUS COPYRIGHT 2002 ACS  
AN 1994:185719 HCAPLUS  
DN 120:185719  
TI Gustducin and gustducin .alpha. subunit, production of the .alpha.

subunit, and its use in methods for identifying taste modifying agents  
 IN Margolskee, Robert F.  
 PA USA  
 SO PCT Int. Appl., 50 pp.  
 CODEN: PIXXD2  
 DT Patent  
 LA English  
 FAN.CNT 1

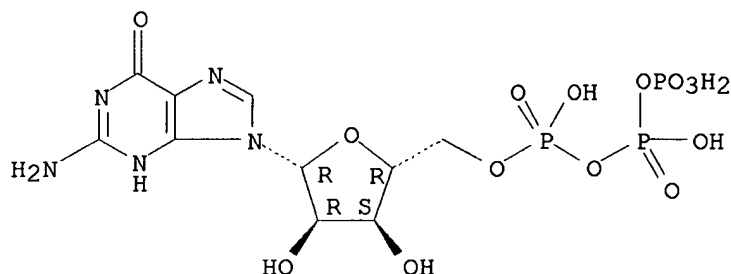
|      | PATENT NO.  | KIND | DATE     | APPLICATION NO. | DATE     |
|------|---|------|----------|-----------------|----------|
| PI   | WO 9321337  | A1   | 19931028 | WO 1993-US3279  | 19930408 |
|      | W: CA, JP   |      |          |                 |          |
|      | RW: AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE  |      |          |                 |          |
|      | US 5688662  | A    | 19971118 | US 1992-868353  | 19920409 |
|      | EP 635064   | A1   | 19950125 | EP 1993-909281  | 19930408 |
|      | R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LI, LU, MC, NL, PT, SE   |      |          |                 |          |
|      | JP 07505776   | T2   | 19950629 | JP 1993-518454  | 19930408 |
|      | EP 1146124  | A2   | 20011017 | EP 2001-108948  | 19930408 |
|      | R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE   |      |          |                 |          |
|      | US 5817759  | A    | 19981006 | US 1995-407804  | 19950320 |
|      | US 6008000  | A    | 19991228 | US 1998-124807  | 19980728 |
| PRAI | US 1992-868353  | A    | 19920409 |                 |          |
|      | EP 1993-909281  | A3   | 19930408 |                 |          |
|      | US 1993-45801   | B1   | 19930408 |                 |          |
|      | WO 1993-US3279  | W    | 19930408 |                 |          |
|      | US 1995-407804  | A1   | 19950320 |                 |          |
| AB   | A <b>taste</b> cell-specific guanine nucleotide binding protein, gustducin, and polynucleotide sequences encoding the .alpha. subunit of rat gustducin are disclosed. Methods of modifying <b>taste</b> involve agents that <b>inhibit</b> or activate the gustducin .alpha. subunit. Methods for identifying such <b>taste</b> modifying agents use the .alpha. subunit of gustducin. CDNA encoding the .alpha. subunit of gustducin was identified, cloned, and sequenced from a rat <b>taste</b> cell enriched cDNA library. Gustducin .alpha. subunit mRNA was only detected in <b>taste</b> tissue. Antibodies were raised in rabbits. |      |          |                 |          |
| IT   | <b>146-91-8P</b> , GDP<br>RL: MFM (Metabolic formation); BIOL (Biological study); FORM (Formation, nonpreparative); PREP (Preparation)<br>(formation of, in assay for identifying taste modifying agents using gustducin .alpha. chain)   |      |          |                 |          |
| RN   | 146-91-8 HCAPLUS  |      |          |                 |          |
| CN   | Guanosine 5'-(trihydrogen diphosphate) (9CI) (CA INDEX NAME)  |      |          |                 |          |

Absolute stereochemistry.



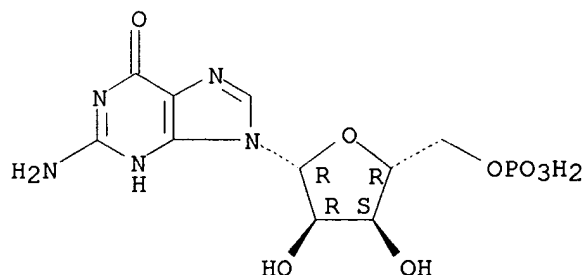
IT **86-01-1**, GTP  
 RL: BIOL (Biological study)  
 (in assays for identifying taste modifying agents using gustducin  
 .alpha. chain)  
 RN 86-01-1 HCAPLUS  
 CN Guanosine 5'-(tetrahydrogen triphosphate) (8CI, 9CI) (CA INDEX NAME)

Absolute stereochemistry.



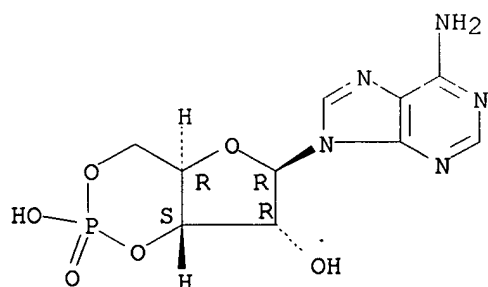
L41 ANSWER 35 OF 75 HCAPLUS COPYRIGHT 2002 ACS  
 AN 1994:71242 HCAPLUS  
 DN 120:71242  
 TI **Inhibitory** effects of free glutamate, guanosine monophosphate,  
 inosine monophosphate and a **flavor** enhancer on bone marrow  
 genotoxicity of dimethylnitrosamine  
 AU Lim-Sylianco, Clara Y.; Sylianco-Wu, L.; Botuyan, M. V.  
 CS Coll. Sci., Univ. Philippines, Quezon City, Philippines  
 SO Philipp. J. Sci. (1992), 121(1), 25-30  
 CODEN: PJSCAK; ISSN: 0031-7683  
 DT Journal  
 LA English  
 AB Based on the results of the micronucleus test, glutamic acid, guanosine  
 monophosphate, and inosine monophosphate and a flavor enhancer contg.  
 these nucleotides and glutamic acid did not exhibit mutagenic and  
 clastogenic activity to bone marrow cells of mice. These substances  
 showed antigenotoxic activity against dimethylnitrosamine, a mutagen and  
 carcinogen.  
 IT **85-32-5**, Guanosine monophosphate  
 RL: BAC (Biological activity or effector, except adverse); BIOL  
 (Biological study)  
 (dimethylnitrosamine genotoxicity to bone marrow response to)  
 RN 85-32-5 HCAPLUS  
 CN 5'-Guanylic acid (8CI, 9CI) (CA INDEX NAME)

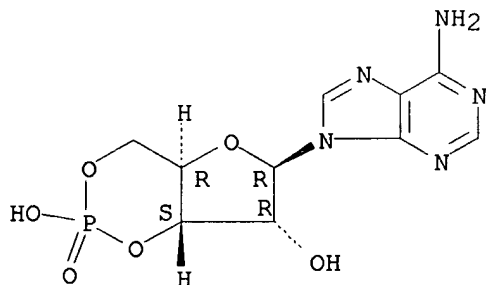
Absolute stereochemistry.



L41 ANSWER 36 OF 75 HCAPLUS COPYRIGHT 2002 ACS  
 AN 1993:600230 HCAPLUS  
 DN 119:200230  
 TI Cellular transduction of sugar-induced sweet taste  
 AU Naim, Michael  
 CS Fac. Agric., Hebrew Univ. Jerusalem, Rehovot, 76-100, Israel  
 SO Dev. Food Sci. (1993), 32(Food Flavors, Ingredients and Composition),  
 647-56  
 CODEN: DFSCDX; ISSN: 0167-4501  
 DT Journal  
 LA English  
 AB Recent studies have shown that **taste** (gustatory) membrane  
 preps. from rats and pigs contain adenylate cyclase, which can be  
 stimulated by sugars in the presence of GTP. Concomitantly, sucrose  
 stimulation of adenylate cyclase in lingual membranes was  
**inhibited** by sweet **taste inhibitors** such as  
 copper and zinc ions, as well as by the sweet **taste**  
**inhibitor** Me 4,6-dichloro-4,6-dideoxy-.alpha.-D-galactopyranoside  
 (MAD-diCl-Gal), in complete agreement with their effect on electrophysiol.  
 sweet **taste** responses. Furthermore, exposure of intact  
**tastebud** sheets to sucrose resulted in a two to threefold increase  
 in the cellular accumulation of cAMP, a response which was  
**inhibited** by 65% following the application of 50 mM MAD-diCl-Gal.  
 Based on cellular, electrophysiol. and biochem. expts. at the membrane  
 level and with intact **taste** tissue, the involvement of cAMP as a  
 second messenger for sugar **taste** transduction is proposed.  
 IT 60-92-4, CAMP  
 RL: BIOL (Biological study)  
 (in sugar taste transduction)  
 RN 60-92-4 HCAPLUS  
 CN Adenosine, cyclic 3',5'-(hydrogen phosphate) (8CI, 9CI) (CA INDEX NAME)

Absolute stereochemistry.





L41 ANSWER 37 OF 75 HCAPLUS COPYRIGHT 2002 ACS

AN 1993:596038 HCAPLUS

DN 119:196038

TI Proton currents through amiloride-sensitive sodium channels in isolated hamster taste cells: Enhancement by vasopressin and cAMP

AU Gilbertson, Timothy A.; Roper, Stephen D.; Kinnamon, Sue C.

CS Dep. Anat. Neurobiol., Colorado State Univ., Fort Collins, CO, 80523, USA

SO Neuron (1993), 10(5), 931-42

CODEN: NERNET; ISSN: 0896-6273

DT Journal

LA English

AB Amiloride has been suggested to **inhibit** responses to a variety of **taste** stimuli, including salty, sweet, and sour (acid). To test for the involvement of amiloride-sensitive Na<sup>+</sup> channels in the transduction of acid stimuli, fungiform **taste** receptor cells were examd. using patch-clamp techniques. Approx. 1/2 of all cells had amiloride-sensitive Na<sup>+</sup> currents (I<sub>Na</sub>) with a K<sub>i</sub> value near 0.2 .mu.M amiloride. After blocking voltage-gated conductances, cells having amiloride sensitivity were tested for responses to acid stimuli. Over 3/4 of the cells showed an inward proton current (I<sub>H</sub><sup>+</sup>) with an extrapolated reversal potential near approx. +150 mV, which was completely blocked by amiloride (30 .mu.M). Treatment of isolated **taste** cells with AVP caused equiv. increases in both I<sub>Na</sub> and I<sub>H</sub><sup>+</sup>; each effect was mimicked by 8-Br-cAMP. These results indicate that protons permeate amiloride-sensitive Na<sup>+</sup> channels in hamster fungiform **taste** cells and contribute to acid transduction.

IT 60-92-4, CAMP

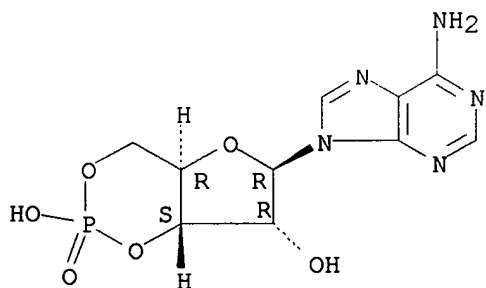
RL: BIOL (Biological study)

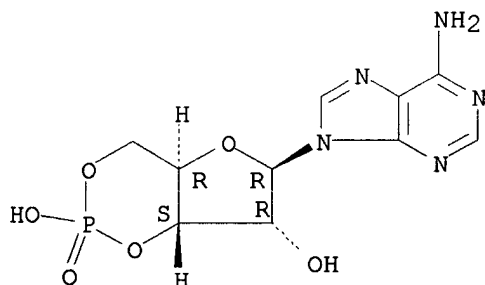
(proton currents through sodium channel in taste bud enhancement by)

RN 60-92-4 HCAPLUS

CN Adenosine, cyclic 3',5'-(hydrogen phosphate) (8CI, 9CI) (CA INDEX NAME)

Absolute stereochemistry.





L41 ANSWER 38 OF 75 HCAPLUS COPYRIGHT 2002 ACS

AN 1993:403594 HCAPLUS

DN 119:3594

TI Purification and properties of membrane-bound 5'-nucleotidase from black rockfish (*Sebastes inermis*) muscle

AU Marseno, Djagal Wiseso; Hori, Kanji; Miyazawa, Keisuke

CS Fac. Appl. Biol. Sci., Hiroshima Univ., Higashi, 724, Japan

SO J. Agric. Food Chem. (1993), 41(6), 863-9

CODEN: JAFCAU; ISSN: 0021-8561

DT Journal

LA English

AB A membrane-bound 5'-nucleotidase was purified from the black rockfish *S. inermis* white muscle to homogeneity using Triton X-100 for the solubilization and two steps of affinity chromatog. on Con A and 5'-AMP Sepharose. The enzyme is a glycoprotein, and its active site contains a serine residue. The subunit and native mol. wts. are 67,000 and 265,000, resp. The optimal pH and temp. using IMP as substrate were 8.3 and 45.degree., resp. The enzyme hydrolyzes all nucleoside 5'-monophosphates tested by not other phosphate esters examd. The Vmax/Km values indicated that of the substrates tested the enzyme has the greatest affinity for AMP. The enzyme was **inhibited** by phenylmethanesulfonyl fluoride, diisopropylfluorophosphate, ATP, ADP, adenosine, o-phenantroline, and EDTA. The **inhibition** of EDTA was counteracted by addn. of divalent cations. It was **inhibited** by the lipid antioxidant BHA, at millimolar range, but not by BHT. The results on enzyme regulation are discussed with ref. to the freshness and **flavoring** quality of fish.

IT 61-19-8, 5'-AMP, biological studies

RL: BIOL (Biological study)

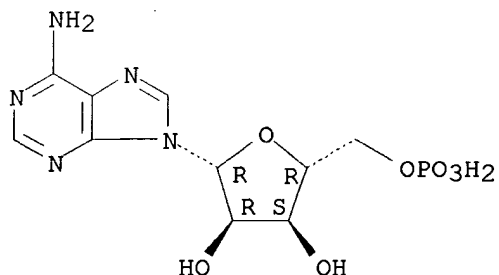
(nucleotidase of black rockfish muscle membrane affinity for)

RN 61-19-8 HCAPLUS

CN 5'-Adenylic acid (8CI, 9CI) (CA INDEX NAME)

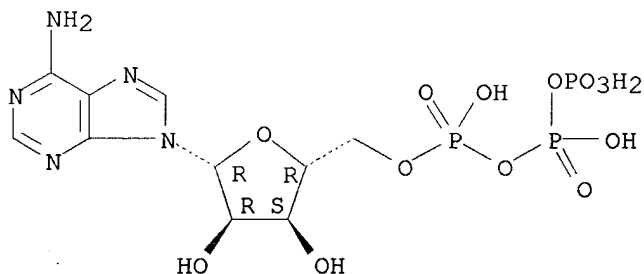
Absolute stereochemistry.





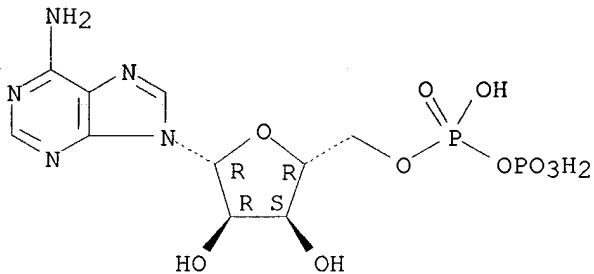
IT 56-65-5, 5'-ATP, biological studies 58-64-0, 5'-ADP,  
 biological studies  
 RL: BIOL (Biological study)  
 (nucleotidase of black rockfish muscle membrane inhibition by, in  
 magnesium presence)  
 RN 56-65-5 HCAPLUS  
 CN Adenosine 5'-(tetrahydrogen triphosphate) (8CI, 9CI) (CA INDEX NAME)

Absolute stereochemistry.



RN 58-64-0 HCAPLUS  
 CN Adenosine 5'-(trihydrogen diphosphate) (9CI) (CA INDEX NAME)

Absolute stereochemistry.



L41 ANSWER 39 OF 75 HCAPLUS COPYRIGHT 2002 ACS  
 AN 1992:103343 HCAPLUS  
 DN 116:103343  
 TI Taste synergism between monosodium glutamate and 5'-ribonucleotide in mice  
 AU Ninomiya, Yuzo; Kurenuma, Shuji; Nomura, Takayuki; Uebayashi, Hajimu;

Kawamura, Hirosada

CS Sch. Dent., Asahi Univ., Motosu, 501-02, Japan

SO Comp. Biochem. Physiol., A: Comp. Physiol. (1992), 101A(1), 97-102

CODEN: CBPAB5; ISSN: 0300-9629

DT Journal

LA English

AB Strain differences of mice were found in the **taste** synergism between monosodium L-glutamate (MSG) and disodium 5'-guanylate (GMP). Magnitudes of chorda tympani responses to the mixt. of MSG and GMP over the sum of responses to each component were greater in the order of C3H/HeSlc(C3H) > C57BL/6CrSlc(C57BL) > BALB/cCrSlc(BALB) mice. The greatest synergism was obsd. in response to the mixt. of 0.03M MSG and 0.1 mM GMP, to which responses were about 2.6, 1.8 and 1.4 times greater than the sum of each component in C3H, C57BL and BALB mice, resp. Magnitudes of **inhibition** of MSG and mixt. responses by the lingual treatment of proteolytic enzyme, Pronase E, were greater in the same order of C3H > C57BL > BALB mice as that obsd. in magnitudes of the synergism. These results suggest that there exists quant. differences in receptors responsible for **taste** synergism between MSG and GMP among three mouse strains.

IT 5550-12-9, Disodium 5'-guanylate

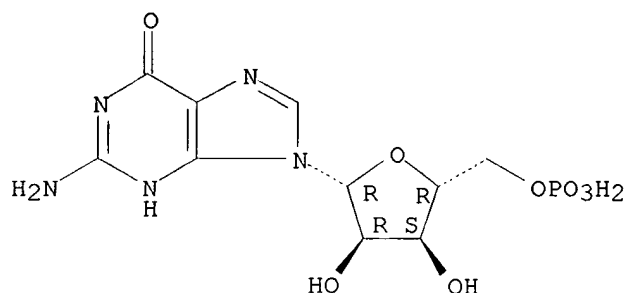
RL: BIOL (Biological study)

(taste synergism between monosodium glutamate and, in mouse, strain differences in)

RN 5550-12-9 HCAPLUS

CN 5'-Guanylic acid, disodium salt (7CI, 8CI, 9CI) (CA INDEX NAME)

Absolute stereochemistry.



●2 Na

L41 ANSWER 40 OF 75 HCAPLUS COPYRIGHT 2002 ACS

AN 1991:630939 HCAPLUS

DN 115:230939

TI Breads containing coated ribonucleotide salts and their production

IN Suzu, Chihiro; Kotani, Koichi; Toyota, Takeshi

PA Takeda Chemical Industries, Ltd., Japan

SO PCT Int. Appl., 25 pp.

CODEN: PIXXD2

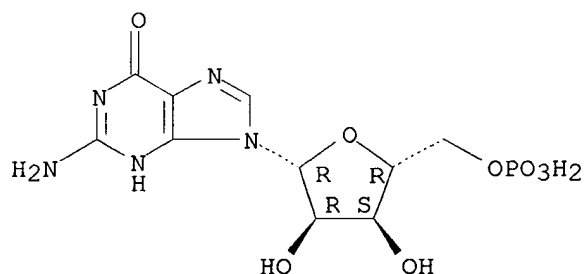
DT Patent

LA English

FAN.CNT 1

|      | PATENT NO.   | KIND | DATE     | APPLICATION NO. | DATE     |
|------|--|------|----------|-----------------|----------|
| PI   | WO 9112724   | A1   | 19910905 | WO 1991-JP275   | 19910301 |
|      | W: JP, US  |      |          |                 |          |
|      | RW: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LU, NL, SE   |      |          |                 |          |
|      | EP 517917  | A1   | 19921216 | EP 1991-905347  | 19910301 |
|      | R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE  |      |          |                 |          |
|      | JP 05506572  | T2   | 19930930 | JP 1991-505011  | 19910301 |
| PRAI | JP 1990-52278  |      | 19900302 |                 |          |
|      | WO 1991-JP275  |      | 19910301 |                 |          |
| AB   | Breads with improved <b>taste</b> are prepd. using flour contg. fat- or oil-coated 5'-ribonucleotide salts. The coating <b>inhibits</b> degrdn. of the nucleotides by nucleotidases. |      |          |                 |          |
| IT   | <b>85-32-5D</b> , 5'-Guanylic acid, salts  |      |          |                 |          |
|      | RL: BIOL (Biological study)  |      |          |                 |          |
|      | (flour contg. fat/oil-coated, for bread prepn., taste improvement in relation to)  |      |          |                 |          |
| RN   | 85-32-5 HCAPLUS  |      |          |                 |          |
| CN   | 5'-Guanylic acid (8CI, 9CI) (CA INDEX NAME)  |      |          |                 |          |

Absolute stereochemistry.



L41 ANSWER 41 OF 75 HCAPLUS COPYRIGHT 2002 ACS  
 AN 1991:469137 HCAPLUS  
 DN 115:69137  
 TI Gustatory neural responses in preweanling mice  
 AU Ninomiya, Yuzo; Tanimukai, Tsutomu; Yoshida, Sadahiro; Funakoshi, Masaya  
 CS Sch. Dent., Asahi Univ., Hozumi, 501-02, Japan  
 SO Physiol. Behav. (1991), 49(5), 913-18  
 CODEN: PHBHA4; ISSN: 0031-9384  
 DT Journal  
 LA English  
 AB **Taste** sensitivity of preweanling mice was studied by examg. responses of the chorda tympani (CT) and glossopharyngeal (GL) nerves to various **taste** stimuli, and was compared to that of adult mice. In mice of 7-10 days of age, compared to that of the CT nerve, the threshold of the GL nerve for monosodium L-glutamate (MSG) was low, but those for sucrose and NaCl were high. Sensitivities to HCl and quinine-HCl were similar between the CT and GL nerves, although that to quinine-HCl was larger in the GL nerve than in the CT nerve in adult mice. Enhancement of MSG responses by addn. of GMP was obsd. in the CT nerve but not in the GL nerve in this age group. In mice of 8-16 wk of age, the threshold of the GL nerve for MSG became higher but that for NaCl became lower. Enhancement of MSG responses by addn. of GMP appeared also in the

GL nerve. **Inhibition** of NaCl responses by amiloride was obsd. in the CT nerve. Apparently, in mice, the GL nerve is important **taste** input for umami substances esp. during the preweanling period, whereas the CT nerve is for sweet and salty substances. Properties of umami and salt receptor systems change during the postweanling period.

IT 5550-12-9, Disodium 5'-guanylate

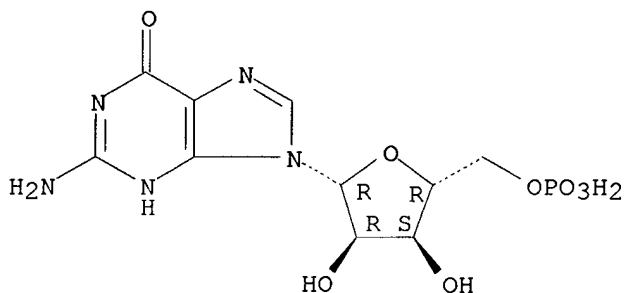
RL: BIOL (Biological study)

(umami taste of monosodium glutamate and, chorda tympani and glossopharyngeal nerve responses to, in preweanling animals)

RN 5550-12-9 HCAPLUS

CN 5'-Guanylic acid, disodium salt (7CI, 8CI, 9CI) (CA INDEX NAME)

Absolute stereochemistry.



●2 Na

L41 ANSWER 42 OF 75 HCAPLUS COPYRIGHT 2002 ACS

AN 1991:446759 HCAPLUS

DN 115:46759

TI Canine taste nerve responses to umami substances

AU Kumazawa, Takashi; Nakamura, Makoto; Kurihara, Kenzo

CS Fac. Pharm. Sci., Hokkaido Univ., Sapporo, 060, Japan

SO Physiol. Behav. (1991), 49(5), 875-81

CODEN: PHBHA4; ISSN: 0031-9384

DT Journal

LA English

AB The **taste** responses to umami substances such as monosodium glutamate (MSG), GMP, and IMP were recorded from the canine chorda tympani nerve. A large synergism was obsd. between MSG and the nucleotides in most mongrel dogs (type A dog). The extent of the synergism between MSG and the nucleotides was much larger than that obsd. in any other animal examd. except for humans. No synergism was obsd. between nucleotide (GMP) and stimuli other than MSG, such as NaCl, HCl, sucrose, quinine, and glycine. Thus, the dog is a suitable exptl. animal for studies on the responses to umami substances. To differentiate umami and salt components in the responses to umami substances, the effects of amiloride on the responses were examd. Amiloride **inhibited** the response to MSG, but did not **inhibit** the response to GMP alone or those induced by synergism between GMP and MSG. Apparently, GMP acts as an agonist and MSG acts as a modulator for the umami receptor in the dog. The synergism can be explained by an allosteric model where the umami receptor is

assumed to have two binding sites, one for GMP and another for MSG.

IT 61-19-8, 5'-AMP, biological studies 85-32-5, 5'-GMP

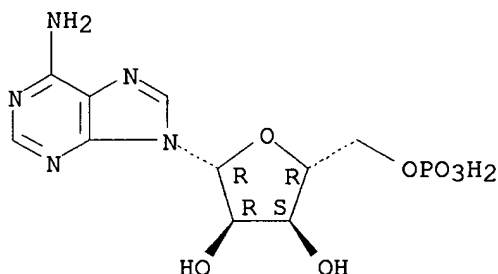
RL: BIOL (Biological study)

(monosodium glutamate synergism with, as umami substances, in dogs,  
taste nerve responses to)

RN 61-19-8 HCAPLUS

CN 5'-Adenylic acid (8CI, 9CI) (CA INDEX NAME)

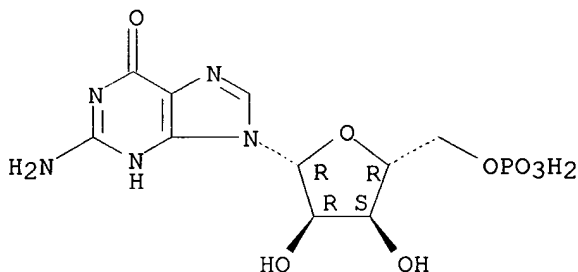
Absolute stereochemistry.



RN 85-32-5 HCAPLUS

CN 5'-Guanylic acid (8CI, 9CI) (CA INDEX NAME)

Absolute stereochemistry.



L41 ANSWER 43 OF 75 HCAPLUS COPYRIGHT 2002 ACS

AN 1991:426771 HCAPLUS

DN 115:26771

TI Generation of cyclic AMP in taste buds of the rat circumvallate papilla in response to sucrose

AU Striem, Benjamin J.; Naim, Michael; Lindemann, Bernd

CS Fac. Agric., Hebrew Univ. Jerusalem, Rehovot, 76100, Israel

SO Cell. Physiol. Biochem. (1991), 1(1), 46-54

CODEN: CEPBEW; ISSN: 1015-8987

DT Journal

LA English

AB Epithelial sheets rich in **taste** buds and free of muscle tissue and von Ebner's washing glands were isolated as a U-shaped cleft which surrounds the circumvallate (CV) papilla of the rat tongue. The sheet of CV tissue from 1 tongue (total protein content: 8-14 .mu.g) was cut in 2 approx. equal parts which were then incubated with the permeant phosphodiesterase **inhibitor** (IBMX; 0.3 mM) and 0 or 150-600 mM

sucrose. After 6 min of incubation, the sheets were washed, the cells permeabilized and their cAMP content detd. by RIA. Paired ests. with tissue from the same animal showed a significant sucrose-induced cAMP prodn. (range 5-20 fmol/.mu.g protein at 600 mM sucrose). This increase in intracellular cAMP was linearly dependent on the sucrose concn. and was suppressed by .apprx.65% when 50 mM of a competitive antagonist of sucrose (Me 4,6-dichloro-4,6-dideoxy-.alpha.-D-galactopyranoside) was added to the sucrose soln. Epithelial sheets free of **taste** buds did not respond to either sucrose or the **inhibitor**. These results are in line with previous suggestions that cAMP may be a 2nd messenger in the transduction of sweet **taste** in the rat.

IT 60-92-4, CAMP

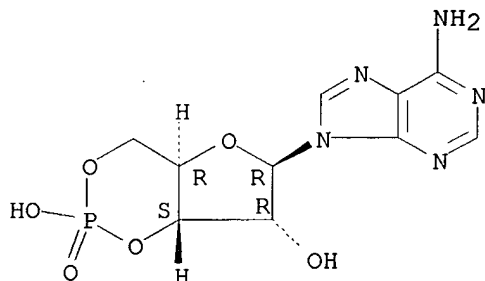
RL: FORM (Formation, nonpreparative)

(formation of, in tongue taste buds, sucrose effect on)

RN 60-92-4 HCAPLUS

CN Adenosine, cyclic 3',5'-(hydrogen phosphate) (8CI, 9CI) (CA INDEX NAME)

Absolute stereochemistry.



L41 ANSWER 44 OF 75 HCAPLUS COPYRIGHT 2002 ACS

AN 1991:119400 HCAPLUS

DN 114:119400

TI Canine taste nerve responses to monosodium glutamate and disodium guanylate: differentiation between umami and salt components with amiloride

AU Nakamura, Makoto; Kurihara, Kenzo

CS Fac. Pharm. Sci., Hokkaido Univ., Sapporo, Japan

SO Brain Res. (1991), 541(1), 21-8

CODEN: BRREAP; ISSN: 0006-8993

DT Journal

LA English

AB It has been argued whether the umami substances such as monosodium glutamate (MSG) and disodium GMP stimulate the salt receptor or the unique receptor to the umami substances. The effects were examd. of amiloride, which inhibited the canine chorda tympani nerve responses to salts such as NaCl, KCl, and NH4Cl, in a competitive manner, on the nerve responses to the umami substances and differentiated between the umami and salt components. Amiloride shifted the dose-response curves for MSG to a higher concn. region, suggesting that amiloride inhibits the response to MSG in a competitive manner. The response to GMP alone and that induced by synergism between relatively low concns. of MSG and GMP were not inhibited by amiloride. Apparently, the response to MSG alone is the salt response and the response to GMP alone or that induced by the synergism is the umami response. The presence of MSG shifted the dose-response curves

for GMP to a lower concn. region, suggesting that MSG increases the affinity of GMP to umami receptors. The present results favor the conclusion that GMP acts as an agonist and MSG acts as a modulator for the umami receptor in the dog. The synergism can be explained by an allosteric model where the umami receptor is assumed to have 2 binding sites, 1 for GMP and another for MSG.

IT 5550-12-9, Disodium 5'-guanylate

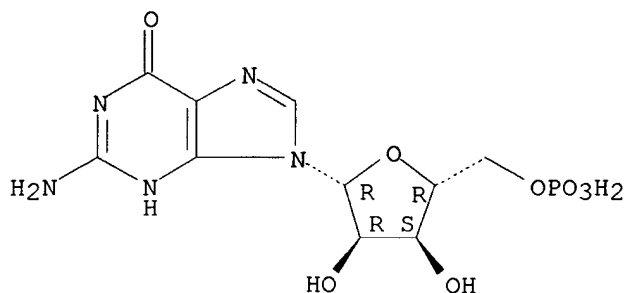
RL: BIOL (Biological study)

(taste nerve response to, in dog, umami and salt components in relation to)

RN 5550-12-9 HCAPLUS

CN 5'-Guanylic acid, disodium salt (7CI, 8CI, 9CI) (CA INDEX NAME)

Absolute stereochemistry.



●2 Na

L41 ANSWER 45 OF 75 HCAPLUS COPYRIGHT 2002 ACS

AN 1990:421187 HCAPLUS

DN 113:21187

TI Effects of cyclic GMP on the sugar taste receptor cell of the fly *Phormia regina*

AU Amakawa, Taisaku; Ozaki, Mamiko; Kawata, Kazuko

CS Coll. Gen. Educ., Kobe Univ., Nada, 657, Japan

SO J. Insect Physiol. (1990), 36(4), 281-6

CODEN: JIPHAF; ISSN: 0022-1910

DT Journal

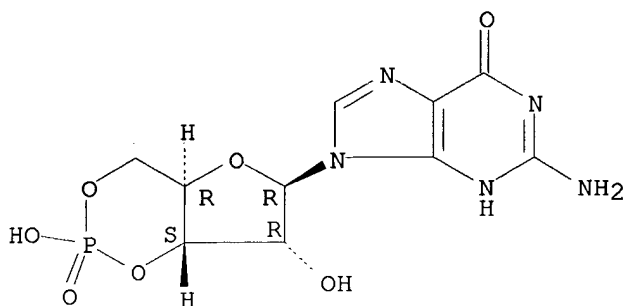
LA English

AB In some sensory receptors of vertebrates, cGMP and(or) cAMP is demonstrated to mediate information from the receptor mol. to the ion channel. The labellar chemosensillum of the fly, *P. regina*, is a hair-like organ which contains 4 **taste** cells, i.e. the sugar, the salt, the water receptor cells, and the fifth cell. They generate spike potentials of different sizes which are easily discriminated from each other. When a membrane-permeable cGMP analog, dibutyryl cGMP, was applied to the tip of sensillum, large spikes were evoked. Membrane-impermeable nucleotides also evoked the same spikes, but their stimulating effect was less than that of dibutyryl cGMP. Judging from the size of the spikes and feeding behavior of flies to the nucleotides, the spikes were identified as those from the sugar receptor cells. When the mixt. of dibutyryl cGMP and phosphodiesterase **inhibitor**, both of which are membrane permeable, was repeatedly applied to the sensillum tip,

remaining spikes were obsd. after the removal of the mixt. Furthermore, application of dibutyryl cGMP to the sensillum induced extremely slow adaptation of the sugar receptor cell, whereas adaptation of the cell by sugar stimulation is usually rapid. Based upon these results, the possibility is discussed that cGMP works as a 2nd messenger for the sugar receptor excitation of the fly.

IT 7665-99-8, Cyclic GMP  
 RL: BIOL (Biological study)  
 (sugar taste receptor cells of fly regulation by)  
 RN 7665-99-8 HCAPLUS  
 CN Guanosine, cyclic 3',5'-(hydrogen phosphate) (8CI, 9CI) (CA INDEX NAME)

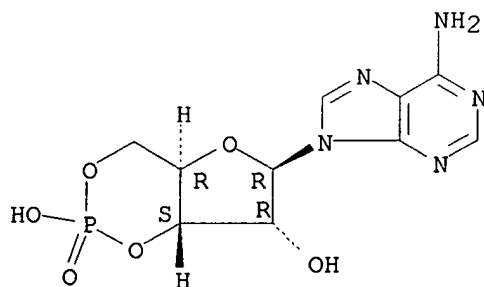
Absolute stereochemistry.



L41 ANSWER 46 OF 75 HCAPLUS COPYRIGHT 2002 ACS  
 AN 1990:52664 HCAPLUS  
 DN 112:52664  
 TI GTP and cGMP both enhance, while cAMP depresses, the response to a furanose sugar of taste chemosensilla in the blowfly *Protophormia terraenovae*  
 AU Liscia, A.; Crnjar, R.; Angioy, A. M.; Tomassini Barbarossa, I.  
 CS Dep. Exp. Biol., Univ. Cagliari, Cagliari, Italy  
 SO Comp. Biochem. Physiol., A: Comp. Physiol. (1989), 94A(2), 257-60  
 CODEN: CBPAB5; ISSN: 0300-9629  
 DT Journal  
 LA English  
 AB The stimulatory effect of a fructose (furanose sugar) soln. on labellar **taste** chemosensilla in the blowfly *P. terraenovae* is enhanced in the presence of GTP or cGMP. The increase in stimulating effectiveness due to cGMP is double with respect to that due to GTP. Chemosensillar responsiveness to the fructose soln. is enhanced by the addn. of an adenylate cyclase **inhibitor**, but is decreased by the addn. of a phosphodiesterase **inhibitor**; these results are consistent with an **inhibitory** effect of cAMP.  
 IT 60-92-4, CAMP 86-01-1, 5'-GTP 7665-99-8, CGMP  
 RL: BIOL (Biological study)  
 (taste chemosensillum response to sugars regulation by, in blowfly)  
 RN 60-92-4 HCAPLUS  
 CN Adenosine, cyclic 3',5'-(hydrogen phosphate) (8CI, 9CI) (CA INDEX NAME)

Absolute stereochemistry.

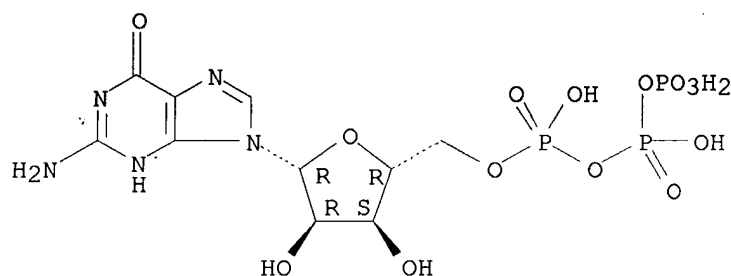




RN 86-01-1 HCAPLUS

CN Guanosine 5'-(tetrahydrogen triphosphate) (8CI, 9CI) (CA INDEX NAME)

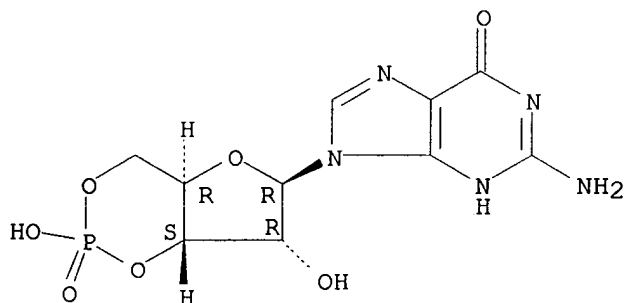
Absolute stereochemistry.



RN 7665-99-8 HCAPLUS

CN Guanosine, cyclic 3',5'-(hydrogen phosphate) (8CI, 9CI) (CA INDEX NAME)

Absolute stereochemistry.



L41 ANSWER 47 OF 75 HCAPLUS COPYRIGHT 2002 ACS

AN 1989:612534 HCAPLUS

DN 111:212534

TI Relation between a constitutional test, the ability to taste phenylthiocarbamide, and the condition of the cyclic nucleotide system

AU Dulatova, N. Kh.; Kliorin, A. I.; Samoilov, V. O.; Novitskii, A. A.; Reznichuk, V. F.; Shelepina, E. P.

CS Voen.-Med. Akad. im. Kirova, Leningrad, USSR

SO Fiziol. Chel. (1989), 15(5), 127-32

CODEN: FICHDB; ISSN: 0131-1646

DT Journal

LA Russian

AB Phenylthiocarbamide (I), like other **bitter** substances, **inhibited** cAMP phosphodiesterase in brain and tongue tissues of the rat. Humans insensitive to the **bitter taste** of I, had increased plasma concns. of cAMP, compared to controls sensitive to I, whereas plasma cGMP was the same in the 2 groups. Apparently, humans insensitive to **bitterness** of I have a genetic disorder in the transport of I to the cytosolic fraction contg. cAMP phosphodiesterase. Thus, **taste** sensitivity to I may be an indication of the status of the cAMP in the human body.

IT 60-92-4, CAMP 7665-99-8, CGMP

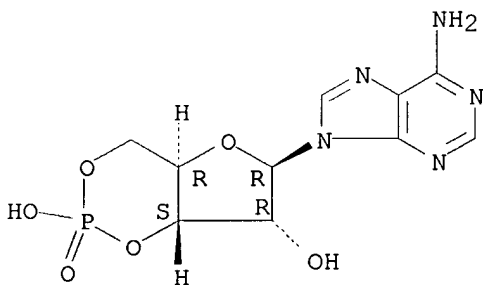
RL: BIOL (Biological study)

(of blood plasma, phenylthiocarbamide bitter taste sensitivity in relation to, in humans)

RN 60-92-4 HCAPLUS

CN Adenosine, cyclic 3',5'-(hydrogen phosphate) (8CI, 9CI) (CA INDEX NAME)

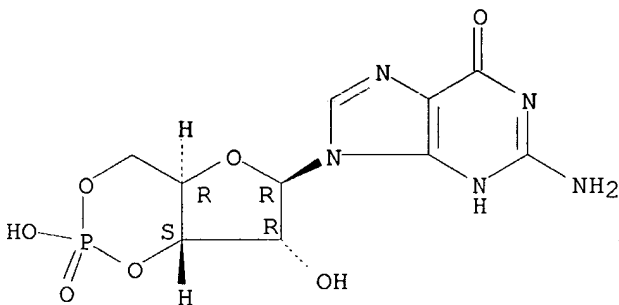
Absolute stereochemistry.



RN 7665-99-8 HCAPLUS

CN Guanosine, cyclic 3',5'-(hydrogen phosphate) (8CI, 9CI) (CA INDEX NAME)

Absolute stereochemistry.



L41 ANSWER 48 OF 75 HCAPLUS COPYRIGHT 2002 ACS

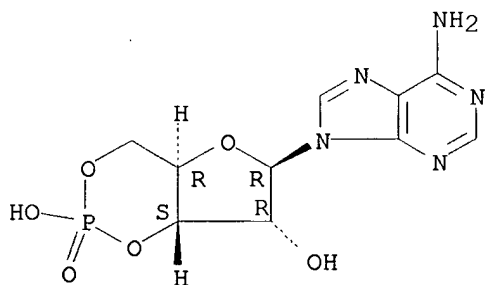
AN 1989:550873 HCAPLUS

DN 111:150873

TI Effect of interreceptor interaction in the chemoreceptor membranes of  
Ictalurus nebulosus

AU Levko, A. V.; Volotovskii, I. D.  
 CS Inst. Fotobiol., Minsk, USSR  
 SO Dokl. Akad. Nauk BSSR (1989), 33(8), 747-9  
 CODEN: DBLRAC; ISSN: 0002-354X  
 DT Journal  
 LA Russian  
 AB The interaction between cAMP- and L-leucine receptors in chemoreceptor membranes from **taste** organs of the North american catfish nebulosus was studied. Leucine **inhibited** the specific binding of [3H]cAMP. The cAMP increased the affinity of chemoreceptor mols. for [3H]-L-leucine. These effects are due to protein-protein interactions in the chemoreceptor membrane coupled with structural rearrangement. The mechanisms of regulation of chemoreceptor app. sensitivity to the stimulus are discussed.  
 IT **60-92-4, CAMP**  
 RL: BIOL (Biological study)  
 (leucine binding by chemoreceptor membrane of catfish taste organ increase by)  
 RN 60-92-4 HCAPLUS  
 CN Adenosine, cyclic 3',5'-(hydrogen phosphate) (8CI, 9CI) (CA INDEX NAME)

Absolute stereochemistry.



L41 ANSWER 49 OF 75 HCAPLUS COPYRIGHT 2002 ACS  
 AN 1989:531174 HCAPLUS  
 DN 111:131174  
 TI Effects of GTP, cGMP and cAMP on the salt response of taste labellar chemosensilla in the blowfly *Protophormia terraenovae*  
 AU Liscia, A.; Angioy, A. M.; Crnjar, R.; Tomassini Barbarossa, I.; Pietra, P.  
 CS Dep. Exp. Biol., Univ. Cagliari, Cagliari, Italy  
 SO Comp. Biochem. Physiol., A: Comp. Physiol. (1989), 93A(3), 523-6  
 CODEN: CBPAB5; ISSN: 0300-9629  
 DT Journal  
 LA English  
 AB The addn. of GTP and cGMP to an NaCl stimulating soln. has an **inhibitory** effect on cation receptor cell responsiveness of **taste** chemosensilla in the blowfly, *P. terraenovae*. The responsiveness of the same **taste** sensilla to an NaCl soln. is enhanced by the addn. of an adenylate cyclase **inhibitor**, but decreased by the addn. of a phosphodiesterase **inhibitor**, confirming the **inhibitory** effect of cAMP.  
 IT **60-92-4, Cyclic AMP 86-01-1, 5'-GTP 7665-99-8, Cyclic GMP**

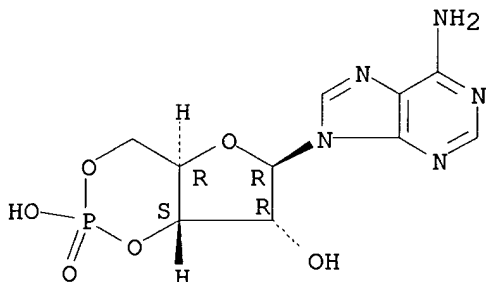
RL: BIOL (Biological study)

(salt response of taste chemosensillum of blowfly response to)

RN 60-92-4 HCAPLUS

CN Adenosine, cyclic 3',5'-(hydrogen phosphate) (8CI, 9CI) (CA INDEX NAME)

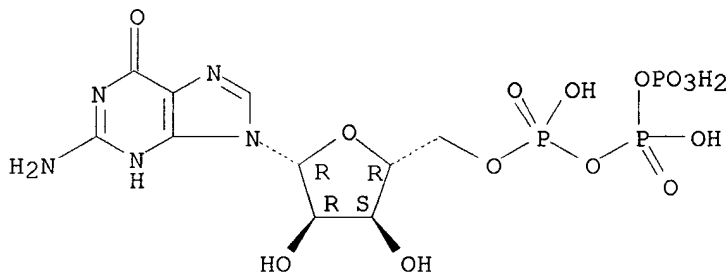
Absolute stereochemistry.



RN 86-01-1 HCAPLUS

CN Guanosine 5'-(tetrahydrogen triphosphate) (8CI, 9CI) (CA INDEX NAME)

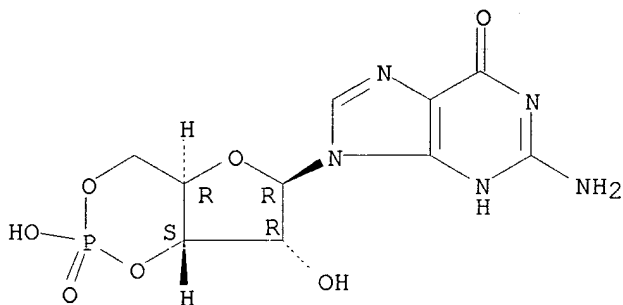
Absolute stereochemistry.



RN 7665-99-8 HCAPLUS

CN Guanosine, cyclic 3',5'-(hydrogen phosphate) (8CI, 9CI) (CA INDEX NAME)

Absolute stereochemistry.

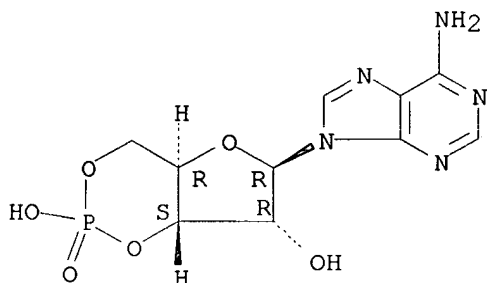


L41 ANSWER 50 OF 75 HCAPLUS COPYRIGHT 2002 ACS

AN 1989:435621 HCAPLUS

DN 111:35621  
 TI Sweet tastants stimulate adenylate cyclase coupled to GTP-binding protein in rat tongue membranes  
 AU Striem, Benjamin J.; Pace, Umberto; Zehavi, Uri; Naim, Michael; Lancet, Doron  
 CS Fac. Agric., Hebrew Univ. Jerusalem, Rehovot, 76100, Israel  
 SO Biochem. J. (1989), 260(1), 121-6  
 CODEN: BIJOAK; ISSN: 0306-3275  
 DT Journal  
 LA English  
 AB Sucrose and other saccharides, which produce an appealing **taste** in rats, were found to significantly stimulate the activity of adenylate cyclase in membranes derived from the anterior-dorsal region of rat tongue. In control membranes derived from either tongue muscle or tongue nonsensory epithelium, the effect of sugars on adenylate cyclase activity was either much smaller or absent. Sucrose enhanced adenylate cyclase activity in a dose-related manner, and this activation was dependent on the presence of guanine nucleotides, suggesting the involvement of a GTP-binding protein (G-protein). The activation of adenylate cyclase by various mono- and di-saccharides correlated with their electrophysiol. potency. Among non-sugar sweeteners, sodium saccharin activated the enzyme, whereas aspartame and neohesperidin dihydrochalcone did not, in correlation with their sweet-**taste** effectiveness in the rat. Sucrose activation of the enzyme was partly **inhibited** by Cu<sup>2+</sup> and Zn<sup>2+</sup>, in agreement with their effect on electrophysiol. sweet-**taste** responses. The results are consistent with a sweet-**taste** transduction mechanism involving specific receptors, a guanine nucleotide-binding protein and the cAMP-generating enzyme adenylate cyclase.  
 IT 60-92-4, CAMP  
 RL: BIOL (Biological study)  
 (in sweet taste transduction mechanism)  
 RN 60-92-4 HCAPLUS  
 CN Adenosine, cyclic 3',5'-(hydrogen phosphate) (8CI, 9CI) (CA INDEX NAME)

Absolute stereochemistry.



L41 ANSWER 51 OF 75 HCAPLUS COPYRIGHT 2002 ACS  
 AN 1989:92681 HCAPLUS  
 DN 110:92681  
 TI Amiloride-blockable sodium currents in isolated taste receptor cells  
 AU Avenet, Patrick; Lindemann, Bernd  
 CS 2nd Dep. Physiol., Univ. Saarland, Homburg/Saar, D-6650, Fed. Rep. Ger.  
 SO J. Membr. Biol. (1988), 105(3), 245-55

CODEN: JMBBBO; ISSN: 0022-2631

DT Journal

LA English

AB Isolated **taste** receptor cells from the frog (*Rana esculenta* and *R. ridibunda*) tongue were investigated under whole-cell patch-clamp conditions. With the cytosolic potential held at -80 mV, >50% of the cells had a stationary inward Na<sup>+</sup> current of 10-700 pA in Ringer's soln. This current was in some cells partially, in others completely, blockable by low concns. of amiloride. With 110 mM Na<sup>+</sup> in the external and 10 mM Na<sup>+</sup> in the internal soln., the **inhibition** const. of amiloride was (at -80 mV) near 0.3 .mu.M. In some cells the amiloride-sensitive conductance was Na<sup>+</sup> specific; in others it passed both Na<sup>+</sup> and K<sup>+</sup>. The Na<sup>+</sup>/K<sup>+</sup> selectivity (estd. from reversal potentials) varied between 1 and 100. The blockability by small concns. of amiloride resembled that of channels found in some Na<sup>+</sup>-absorbing epithelia, but the channels of **taste** cells showed a surprisingly large range of ionic specificities. Receptor cells, which in situ express these channels in their apical membrane, may be competent to detect the **taste** quality salty. The same cells also express tetrodotoxin-blockable voltage-gated Na<sup>+</sup> channels.

IT 60-92-4, Cyclic AMP

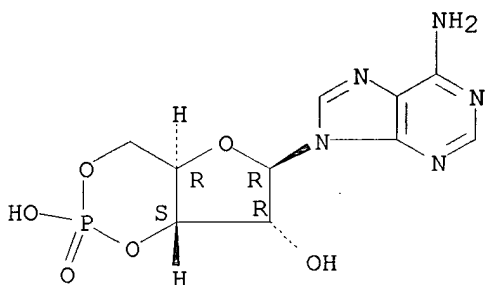
RL: BIOL (Biological study)

(sodium channel-mediated transport by tongue taste receptor cells response to, amiloride-blockable currents in relation to)

RN 60-92-4 HCAPLUS

CN Adenosine, cyclic 3',5'-(hydrogen phosphate) (8CI, 9CI) (CA INDEX NAME)

Absolute stereochemistry.



L41 ANSWER 52 OF 75 HCAPLUS COPYRIGHT 2002 ACS

AN 1988:547029 HCAPLUS

DN 109:147029

TI Primary stages of the chemoreceptor act in the taste organs of the bullhead catfish *Ictalurus nebulosus*

AU Levko, A. V.; Volotovskii, I. D.

CS Inst. Fotobiol., Minsk, USSR

SO Dokl. Akad. Nauk BSSR (1988), 32(8), 757-9

CODEN: DBLRAC; ISSN: 0002-354X

DT Journal

LA Russian

AB The effects of the chem. stimulus leucine on the activity of adenylate cyclase of chemoreceptor membrane from bullhead (*I. nebulosus*) **taste** organs and on the interaction between cAMP-induced

reorganization of the membrane and its surface potential were studied. Leucine **inhibited** chemoreceptor adenylate cyclase activity and cAMP decreased membrane fluorescence and increased the neg. charge of the receptor cell surface. When the membrane surface was protected by NaCl, cAMP had no effect on membrane fluorescence, thus indicating that structural changes and membrane potential changes in the receptor cell are related. The results are discussed in relation to the initial steps in chem. signal transduction in **taste** cells.

IT **60-92-4, CAMP**

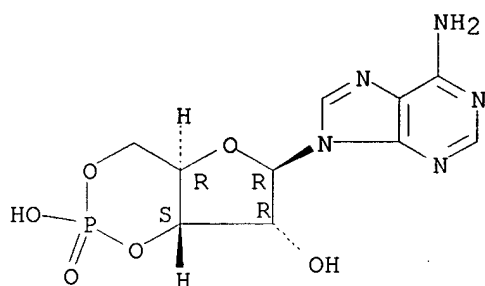
RL: BIOL (Biological study)

(chemoreceptor membrane elec. potential and structure response to)

RN 60-92-4 HCAPLUS

CN Adenosine, cyclic 3',5'-(hydrogen phosphate) (8CI, 9CI) (CA INDEX NAME)

Absolute stereochemistry.



L41 ANSWER 53 OF 75 HCAPLUS COPYRIGHT 2002 ACS

AN 1988:491592 HCAPLUS

DN 109:91592

TI Yeast extract containing oligopeptides, sodium 5'-inosinate, and 5'-guanylate for decreasing unpleasant taste in food

IN Mamoto, Katsuhiko; Yashiro, Jun; Kinoshita, Kazutoshi; Shiraki, Atsuo; Oka, Shunetsuro; Yamamoto, Yukio

PA Sanyo-Kokusaku Pulp Co., Ltd., Japan

SO Jpn. Kokai Tokkyo Koho, 4 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

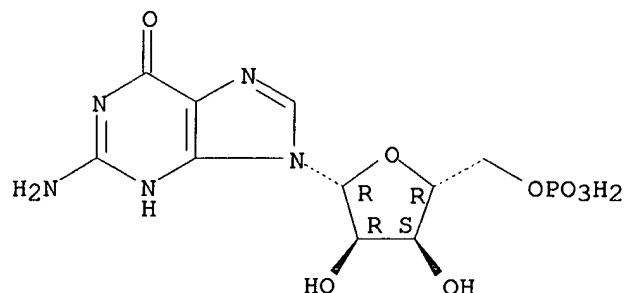
FAN.CNT 1

|    | PATENT NO.  | KIND | DATE     | APPLICATION NO. | DATE     |
|----|-------------|------|----------|-----------------|----------|
| PI | JP 62289161 | A2   | 19871216 | JP 1986-130298  | 19860606 |
|    | JP 02042466 | B4   | 19900921 |                 |          |

AB The yeast ext. which has been autodigested or enzymically decompd. to give a product having oligopeptides .gtoreq.15% is mixed with Na 5'-inosinate (I) and Na 5'-guanylate (II). The compn. is useful in decreasing **bitter taste** of KCl, phosphates, and monoglycerides and smell of fish and meat, and **masking** of unpleasant **tastes** of vegetable proteins. Thus, a yeast ext. after heating was treated with lysozyme, protease, nuclease, and 5'-adenylic deaminase. It was then centrifuged, and the supernatant was spray-dried to give a sample contg. 20% oligopeptides, 1.0% I, and 1.0% II. The test soln. comprising the sample, Polygon C (polyphosphate salts), and aq. NaCl was subjected to functional testing.

IT **5550-12-9**, Sodium 5'-guanylate  
 RL: BIOL (Biological study)  
 (food taste control by oligopeptides and)  
 RN 5550-12-9 HCAPLUS  
 CN 5'-Guanylic acid, disodium salt (7CI, 8CI, 9CI) (CA INDEX NAME)

Absolute stereochemistry.

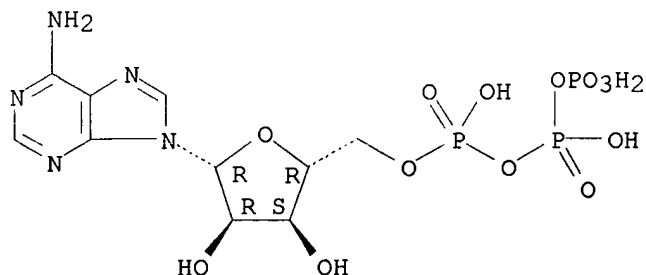


●2 Na

L41 ANSWER 54 OF 75 HCAPLUS COPYRIGHT 2002 ACS  
 AN 1988:19522 HCAPLUS  
 DN 108:19522  
 TI Effects of ATP and cAMP on salt and sugar (responses of chemosensilla in the blowfly)  
 AU Liscia, A.; Pietra, P.; Angioy, A. M.; Crnjar, R.; Tomassini Barbarossa, I.  
 CS Inst. Gen. Physiol., Univ. Cagliari, Cagliari, Italy  
 SO Comp. Biochem. Physiol., A: Comp. Physiol. (1987), 88A(3), 455-9  
 CODEN: CBPAB5; ISSN: 0300-9629  
 DT Journal  
 LA English  
 AB The addn. of cAMP to stimulating solns. of NaCl, fructose (furanose sugar), sucrose, or glucose (pyranose sugars) decreases the responsiveness of labellar chemosensilla in the blowfly *Phormia regina*. The addn. of ATP, while decreasing the responsiveness to NaCl or fructose, enhances the responsiveness to glucose and sucrose. The **inhibiting** effect of ATP on NaCl or fructose responses is suppressed by guanosine 5'-O-(2-thiodiphosphate), an **inhibitor** of adenylate cyclase (and thus of cAMP synthesis); moreover guanosine 5'-O-(2-thiodiphosphate) further enhances the increase in response due to ATP when added to the sucrose or glucose solns. These results suggest a possible involvement of cAMP and ATP in the **taste** reception mechanism in the blowfly.  
 IT **56-65-5**, 5'-ATP, biological studies **60-92-4**, Cyclic AMP  
 RL: BIOL (Biological study)  
 (salt and sugar responses of chemosensilla of blowfly response to)  
 RN 56-65-5 HCAPLUS  
 CN Adenosine 5'-(tetrahydrogen triphosphate) (8CI, 9CI) (CA INDEX NAME)

Absolute stereochemistry.

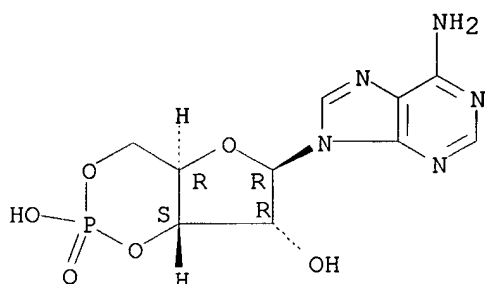




RN 60-92-4 HCAPLUS

CN Adenosine, cyclic 3',5'-(hydrogen phosphate) (8CI, 9CI) (CA INDEX NAME)

Absolute stereochemistry.



L41 ANSWER 55 OF 75 HCAPLUS COPYRIGHT 2002 ACS

AN 1987:512747 HCAPLUS

DN 107:112747

TI Species-specific inhibitory effect of lupine alkaloids on translation in plants

AU Korcz, Aleksandra; Markiewicz, Maria; Pulikowska, Jadwiga; Twardowski, Tomasz

CS Inst. Bioorg. Chem., Pol. Acad. Sci., Poznan, 61-704, Pol.

SO J. Plant Physiol. (1987), 128(4-5), 433-42

CODEN: JPPHEY

DT Journal

LA English

AB The lupine alkaloids lupanine, 13-OH-lupanine, and augustifoline isolated from the seeds of *Lupinus angustifolius* cv. Mirela, and com. sparteine have been tested for their effect on selected steps of protein biosynthesis: aminoacylation of tRNAPhe and enzymic binding of Phe-tRNAPhe to poly-U programmed ribosomes. Only one of these two steps, namely the binding reaction, is effected by alkaloids. Following this observation, evidence is presented that the **inhibitory** properties of these alkaloids are species-specific. Higher **inhibitory** effect (2-10-fold) was obsd. on wheat germ system (alkaloid-free) in comparison to the translational system originating from **bitter** lupine (*L. albus* cv. Pop). Thus, the sensitivity of the system is correlated with the presence of endogenous alkaloids which probably participate in internal interactions.

.IT 27416-86-0, Poly-U

RL: BIOL (Biological study)

(phenylalanine-binding tRNA enzymic binding to, in plants, lupine alkaloids effect on)

RN 27416-86-0 HCAPLUS

CN 5'-Uridylic acid, homopolymer (9CI) (CA INDEX NAME)

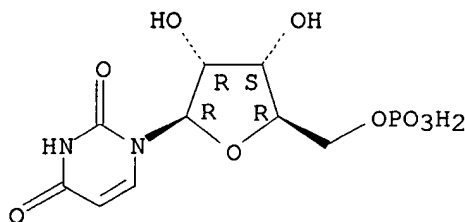
CM 1

CRN 58-97-9

CMF C9 H13 N2 O9 P

CDES 5:B-D-RIBO

Absolute stereochemistry.



L41 ANSWER 56 OF 75 HCAPLUS COPYRIGHT 2002 ACS

AN 1985:503732 HCAPLUS

DN 103:103732

TI Flavor and aroma improvement in processed marine animal foods

PA Ajinomoto Co., Inc., Japan

SO Jpn. Kokai Tokkyo Koho, 4 pp.

CODEN: JKXXAF

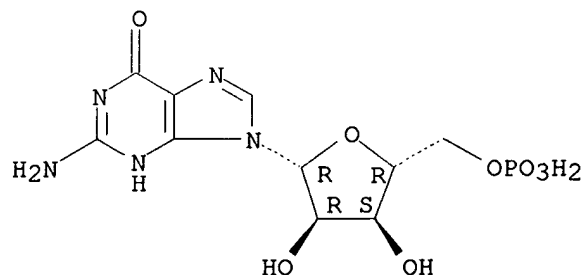
DT Patent

LA Japanese

FAN.CNT 1

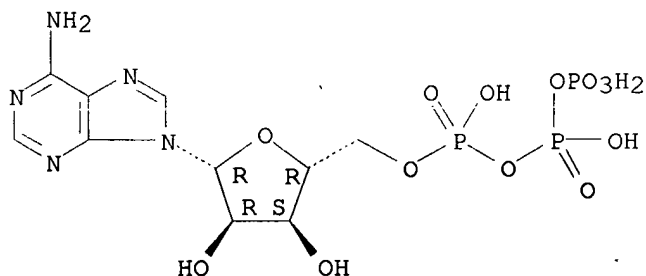
|    | PATENT NO.   | KIND | DATE     | APPLICATION NO. | DATE     |
|----|--|------|----------|-----------------|----------|
| PI | JP 60047663  | A2   | 19850315 | JP 1983-155329  | 19830825 |
| AB | Addn. of 5'-inosinates and, optionally, 5'-guanylates to processed marine animal foods to >20% with respect to the content of glutamic acid and/or its salts <b>masks</b> fishy odor and <b>tastes</b> . |      |          |                 |          |
| IT | <b>85-32-5D</b> , salts  |      |          |                 |          |
|    | RL: BIOL (Biological study)  |      |          |                 |          |
|    | (fish odor masking by)   |      |          |                 |          |
| RN | 85-32-5 HCAPLUS  |      |          |                 |          |
| CN | 5'-Guanylic acid (8CI, 9CI) (CA INDEX NAME)  |      |          |                 |          |

Absolute stereochemistry.



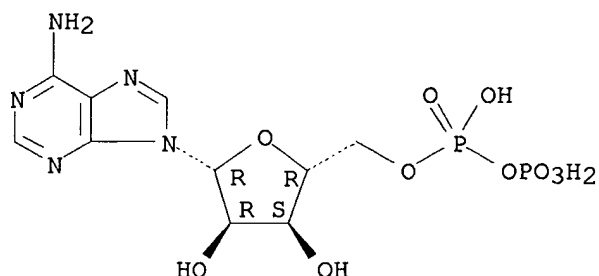
L41 ANSWER 57 OF 75 HCAPLUS COPYRIGHT 2002 ACS  
 AN 1985:503613 HCAPLUS  
 DN 103:103613  
 TI Studies on the manufacture of a spent hen meat hydrolyzate for compound seasoning base  
 AU Lin, Chin Wen; Su, Hou Pin  
 CS Dep. Anim. Husb., Natl. Taiwan Univ., Taipei, Taiwan  
 SO Chung-kuo Nung Yeh Hua Hsueh Hui Chih (1984), 22(3-4), 137-47  
 CODEN: CKNHAA; ISSN: 0578-1736  
 DT Journal  
 LA English  
 AB Meat from 2-yr-old Leghorn hens was hydrolyzed by an extracellular enzyme ext. from *Aspergillus oryzae* AH20, for seasoning base prepn. Extracellular enzymes from *A. oryzae* AH20, contain endopeptidase, exopeptidase and collagenase [9001-12-1] activity. The optimum hydrolytic condition was 55.degree. at a pH value of 6.0 in the presence of 5% NaCl. The activity of the enzymes was enhanced by the presence of Zn<sup>2+</sup>, Hg<sup>2+</sup>, Fe<sup>2+</sup>, Mn<sup>2+</sup>, Ca<sup>2+</sup>, Mg<sup>2+</sup>, but was **inhibited** by Ag<sup>+</sup>, Al<sup>3+</sup>, Co<sup>2+</sup>. After 4 h of incubation at 30.degree., 49.25% of the minced meat was hydrolyzed. Main **flavoring** substances in this hydrolytic soln. were glutamic acid [56-86-0] (30.6 .mu.g/mL), inosine/5'-monophosphate [131-99-7] (0.575 .mu.M), NaCl (0.05%) and total acidity (0.05%). The hydrolytic soln. was concd., freeze dried, ground and mixed with other seasonings to produce compd. seasoning products.  
 IT 56-65-5, biological studies 58-64-0, biological studies 61-19-8, biological studies  
 RL: BIOL (Biological study)  
 (of chicken meat hydrolyzate, for seasoning base manuf.)  
 RN 56-65-5 HCAPLUS  
 CN Adenosine 5'-(tetrahydrogen triphosphate) (8CI, 9CI) (CA INDEX NAME)

Absolute stereochemistry.



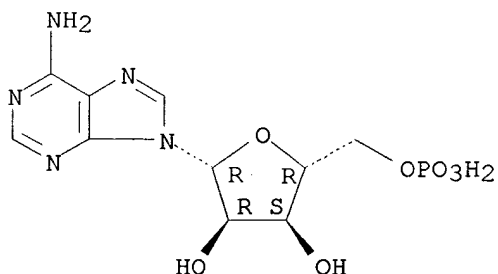
RN 58-64-0 HCAPLUS  
 CN Adenosine 5'-(trihydrogen diphosphate) (9CI) (CA INDEX NAME)

Absolute stereochemistry.



RN 61-19-8 HCAPLUS  
 CN 5'-Adenylic acid (8CI, 9CI) (CA INDEX NAME)

Absolute stereochemistry.



L41 ANSWER 58 OF 75 HCAPLUS COPYRIGHT 2002 ACS  
 AN 1984:186288 HCAPLUS  
 DN 100:186288  
 TI Thyroid hormone **inhibits** purified **taste** bud membrane adenosine 3',5'-monophosphate phosphodiesterase activity  
 AU Law, J. S.; Henkin, R. I.  
 CS Med. Cent., Georgetown Univ., Washington, DC, 20007, USA  
 SO Res. Commun. Chem. Pathol. Pharmacol. (1984), 43(3), 449-62  
 CODEN: RCOCB8; ISSN: 0034-5164  
 DT Journal  
 LA English  
 AB Thyroid hormone **inhibited** purified bovine **taste** bud membrane cAMP phosphodiesterase (PDE) [9036-21-9] activity in a dose-dependent manner. **Taste** bud membrane PDE was **inhibited** most effectively by thyroxine (T4) [51-48-9], followed in order by triiodothyronine (T3) [6893-02-3], diiodotyrosine (DIT) [300-39-0], and moniodotyrosine (MIT) [29592-76-5]. Concns. required for 50% **inhibition** (IC50) of enzyme activity were .apprx.1 .times. 10-6, 1 .times. 10-5, 6 .times. 10-4, and >1 .times. 10-3M for T4, T3, DIT, and MIT, resp. Addn. of Zn at physiol. concns. greatly augmented the **inhibitory** effects of T4 and T3 at lower concns. (10-7 and 10-6M, resp.), resulting in further **inhibition** of PDE by 40-50%.

**Inhibition** of PDE by T4 was relatively tissue selective, as indicated by the IC50 of 1 .times. 10-6M for the **taste** bud, but only 7 .times. 10-6M, 3 .times. 10-5M, and 4 .times. 10-5M, for heart, kidney, and brain PDE, resp. **Inhibition** of **taste** bud membrane PDE by T4 was competitive with substrate cAMP with a Ki of 4 .mu.M. **Inhibition** of PDE, which increases **taste** bud membrane intracellular cAMP, may participate in the action of thyroid hormone in the **taste** process.

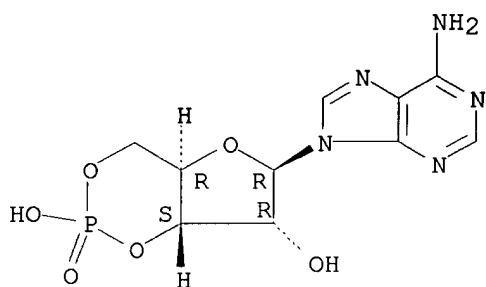
IT 60-92-4

RL: BPR (Biological process); BIOL (Biological study); PROC (Process) (metab. of, by taste bud membrane, thyroid hormones effect on, phosphodiesterase in relation to)

RN 60-92-4 HCAPLUS

CN Adenosine, cyclic 3',5'-(hydrogen phosphate) (8CI, 9CI) (CA INDEX NAME)

Absolute stereochemistry.



L41 ANSWER 59 OF 75 HCAPLUS COPYRIGHT 2002 ACS

AN 1983:590462 HCAPLUS

DN 99:190462

TI Bovine **taste** bud cyclic adenosine 3',5'-monophosphate phosphodiesterase is **inhibited** by divalent metal ions

AU Law, J. S.; Henkin, R. I.

CS Med. Cent., Georgetown Univ., Washington, DC, 20007, USA

SO Res. Commun. Chem. Pathol. Pharmacol. (1983), 41(3), 455-72

CODEN: RCOCB8; ISSN: 0034-5164

DT Journal

LA English

AB Two fractions from bovine **taste** buds, a sol. (S4) and a membrane (P4B) fraction, were used to evaluate the effects of divalent metal ions on cAMP phosphodiesterase (I) activity. Zn2+, Ni2+, Cu2+, Fe2+, Sn2+, and Hg2+, in the presence of 5 mM Mg2+, **inhibited** I activity, whereas these divalent metal ions alone did not affect enzyme activity if Mg2+ was absent. Zn2+ **inhibited** I activity in S4 and P4B **taste** bud fractions with Ki values of 100 and 90 .mu.M, resp.; **inhibition** was noncompetitive with substrate activity, but competitive with Mg2+. In the presence of Mg2+, Zn2+ **inhibited** **taste** bud I more effectively than any other metal ion studied. **Inhibition** of **taste** bud I by divalent metal ions, esp. Zn2+, suggests a role for these substances in the **taste** process through regulation of the intracellular concn. of **taste** bud cAMP.

IT 60-92-4

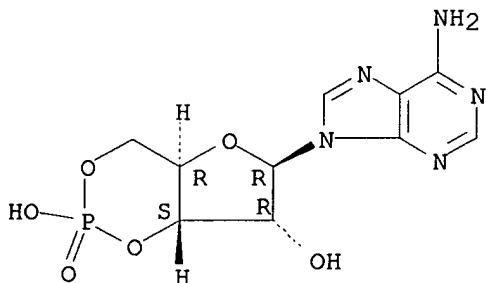
RL: RCT (Reactant)

(reaction of, with cAMP phosphodiesterase, kinetics of)

RN 60-92-4 HCAPLUS

CN Adenosine, cyclic 3',5'-(hydrogen phosphate) (8CI, 9CI) (CA INDEX NAME)

Absolute stereochemistry.



L41 ANSWER 60 OF 75 HCAPLUS COPYRIGHT 2002 ACS

AN 1983:50839 HCAPLUS

DN 98:50839

TI Heterogeneity of sugar receptors group of labellar sensillae of housefly *Musca domestica*

AU Gritsai, O. B.

CS Mosk. Gos. Univ., Moscow, USSR

SO Khemoretseptsiya Nasekomykh (1981), 6, 52-8

CODEN: KHNADP

DT Journal

LA Russian

AB As previously (Elizarov, Yu. A.; Gritsai, O. B., 1977) obsd., the receptors on the labellar sensillae of a single housefly (*M. domestica*) can be divided into 3 classes based on the elec. responses to different solns.: (1) salt receptors that respond to solns. contg .gtoreq.0.01-0.1M NaCl, (2) intermediate receptors that respond maximally to intermediate salt concns. and some of which respond to glucose solns., and (3) sugar receptors that respond to glucose solns. The sugar receptors, however, were heterogeneous in their responses to albumin: (1) 1 class was more sensitive to albumin than to glucose, (2) another class had similar sensitivity to these 2 stimuli, and (3) a 3rd class was insensitive to albumin. Addnl., the intermediate receptors were divisible into 2 classes, one sensitive and the other insensitive to albumin. During the 1st 10 min after a 1-h application of a 10-3M cAMP to the **taste** hairs, the response of the sugar receptors to glucose soln. was increased. The cAMP also enhanced the intermediate receptors responses to their stimuli but not that of the salt receptors. Alloxan, an adenylate kinase **inhibitor**, **inhibited** the activities of the sugar and albumin-sensitive intermediate receptors but not those of the albumin-insensitive intermediate and salt receptors. Imidazole, a phosphodiesterase activator, **inhibited** the activities of the sugar and both intermediate receptor types but not that of salt receptors. The 2',3'-cAMP was without effect.

IT 60-92-4

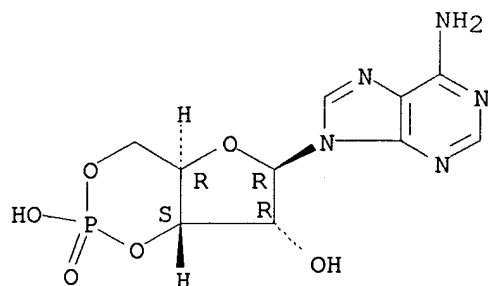
RL: BIOL (Biological study)

(taste receptors of labellar sensillae of housefly in response to)

RN 60-92-4 HCAPLUS

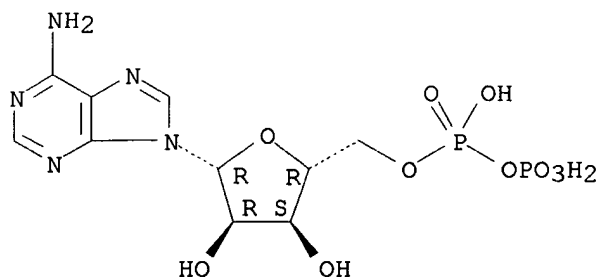
CN Adenosine, cyclic 3',5'-(hydrogen phosphate) (8CI, 9CI) (CA INDEX NAME)

Absolute stereochemistry.



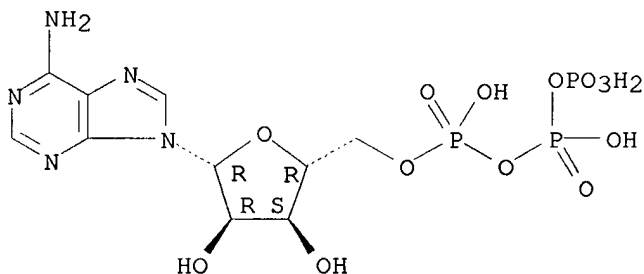
L41 ANSWER 61 OF 75 HCAPLUS COPYRIGHT 2002 ACS  
 AN 1982:179650 HCAPLUS  
 DN 96:179650  
 TI The effect of antioxidants on the fermented sardine and taste compounds of product  
 AU Lee, Eung Ho; Cho, Soon Yeong; Cha, Yong Jun; Jeon, Joong Kyun; Kim, Se Kwon  
 CS Dep. Food Sci. Technol., Univ. Busan, Busan, 601-01, S. Korea  
 SO Han'guk Susan Hakhoechi (1981), 14(4), 201-11  
 CODEN: HSHKAW; ISSN: 0374-8111  
 DT Journal  
 LA English  
 AB Sardine (*Sardinops melanosticta*) was treated with BHA [25013-16-5] or Tenox II [42616-73-9] antioxidants at 0.02%, salted with 20% NaCl, and fermented at 25.degree. to give a fermented fish paste product in which the oxidn. of lipids was **inhibited** during 2 mo of storage as compared to marked oxidn. of the lipids in control fish paste prepd. without antioxidants. During the fermn. period, the decompn. of ATP [56-65-5] to inosine [58-63-9] and hypoxanthine [68-94-0] occurred. The levels of 5'-IMP [131-99-7], betaine [107-43-7], Me3NO [1184-78-7], and creatinine [60-27-5] in the fermented (with antioxidants) fish paste were 1.9 .mu.mol/g, 4.9 mg%, 1.0 mg%, and 475 mg%, resp. Leucine, glutamic acid, isoleucine, alanine, valine, and lysine comprised 59.4% of total fish paste free amino acids. The relation between the **flavor** of processed fish and the content of free amino acids and 5'-IMP is discussed.  
 IT **58-64-0**, biological studies  
 RL: BIOL (Biological study)  
 (of sardines, fermented paste manuf. effect on, antioxidant treatment in relation to)  
 RN 58-64-0 HCAPLUS  
 CN Adenosine 5'-(trihydrogen diphosphate) (9CI) (CA INDEX NAME)

Absolute stereochemistry.



IT **56-65-5**, biological studies  
 RL: BIOL (Biological study)  
 (of sardines, fermented paste manuf. effect on, antioxidants treatment  
 in relation to)  
 RN 56-65-5 HCAPLUS  
 CN Adenosine 5'-(tetrahydrogen triphosphate) (8CI, 9CI) (CA INDEX NAME)

Absolute stereochemistry.

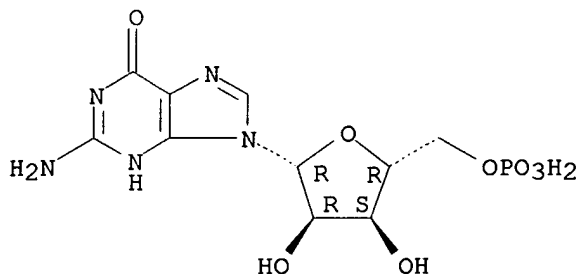


L41 ANSWER 62 OF 75 HCAPLUS COPYRIGHT 2002 ACS  
 AN 1981:190547 HCAPLUS  
 DN 94:190547  
 TI **Masking** of after-taste of chalcone sweeteners  
 PA Asahi Chemical Industry Co., Ltd., Japan  
 SO Jpn. Tokkyo Koho, 4 pp.  
 CODEN: JAXXAD  
 DT Patent  
 LA Japanese  
 FAN.CNT 1

|    | PATENT NO.   | KIND | DATE     | APPLICATION NO. | DATE     |
|----|--|------|----------|-----------------|----------|
| PI | JP 55046699  | B4   | 19801126 | JP 1971-100224  | 19711213 |
| AB | The unfavorable after-taste of the artificial sweeteners neohesperidine dihydrochalcone [20702-77-6], naringin dihydrochalcone [18916-17-1], and hesperitin-7-glucoside dihydrochalcone [21940-36-3] can be reduced by adding 5'-ribonucleotides (such as Na 5'-inosinic acid [14999-51-0] or 5'-guanylic acid [85-32-5]) to 10-50% by wt. |      |          |                 |          |
| IT | <b>85-32-5</b>   |      |          |                 |          |
|    | RL: BIOL (Biological study)<br>(chalcone sweetener after-taste decrease by)  |      |          |                 |          |
| RN | 85-32-5 HCAPLUS  |      |          |                 |          |
| CN | 5'-Guanylic acid (8CI, 9CI) (CA INDEX NAME)  |      |          |                 |          |

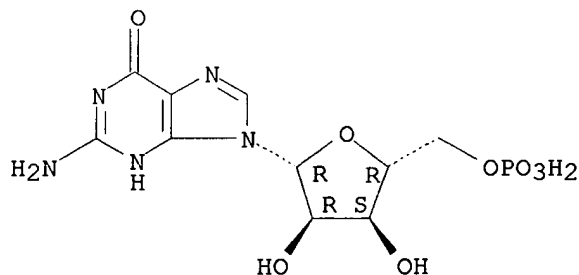


Absolute stereochemistry.



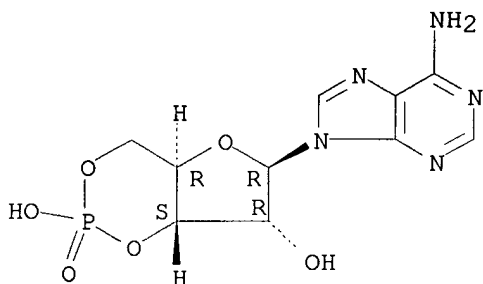
L41 ANSWER 63 OF 75 HCAPLUS COPYRIGHT 2002 ACS  
 AN 1980:637256 HCAPLUS  
 DN 93:237256  
 TI Development of a synthetic meat flavor mixture by using surface response methodology  
 AU Hsieh, Y. P. C.; Pearson, A. M.; Magee, W. T.  
 CS Dep. Food Sci. Human Nutr., Michigan State Univ., East Lansing, MI, 48824, USA  
 SO J. Food Sci. (1980), 45(5), 1125-30, 1135  
 CODEN: JFDSAZ; ISSN: 0022-1147  
 DT Journal  
 LA English  
 AB A synthetic model meat **flavor** system was developed by panel testing of various meat **flavor** precursors at different levels by predicting optimum concns. with surface response methodol. The final **flavor** system consisted of an autoclaved mixt. of simple sugars, amino acids, 5'-nucleotides, glycoprotein, monosodium glutamate [142-47-2], and salt, with fat as an optional component. The S-contg. amino acids and simple sugars were important in **flavor** development; the other components either **masked** the harsh sulfury **taste** or enhanced the meaty **flavor**. The surface response method was a good technique for predicting the optimal level of components in the formulation, although panelists were not able to differentiate between small differences in the levels of components in the mixt. Subjection of the final formulation to the panel in comparison to 5 com. meat **flavor** exts. and an authentic beef ext. showed it to be equal or superior to all of the com. samples and nearly equal to authentic beef ext.  
 IT 85-32-5  
 RL: BIOL (Biological study)  
 (of meat flavoring material)  
 RN 85-32-5 HCAPLUS  
 CN 5'-Guanylic acid (8CI, 9CI) (CA INDEX NAME)

Absolute stereochemistry.



L41 ANSWER 64 OF 75 HCAPLUS COPYRIGHT 2002 ACS  
 AN 1980:177766 HCAPLUS  
 DN 92:177766  
 TI Functional activity of chemoreceptors in the presence of microtubular apparatus  
 AU Esakov, A. I.; Meshcheryakova, O. D.  
 CS Nauchno-Issled. Inst. Norm. Fiziol. im. Anokhina, Moscow, USSR  
 SO Dokl. Akad. Nauk SSSR (1980), 250(5), 1274-7 [Physiol.]  
 CODEN: DANKAS; ISSN: 0002-3264  
 DT Journal  
 LA Russian  
 AB Subepithelial administration of colchicine to the tongue of frogs **inhibited** the reaction of **taste** chemoreceptors to various stimuli (NaCl, AcOH, glucose). The **inhibitory** effect of colchicine was blocked by adrenaline, cAMP, and serotonin. Acetylcholine intensified the **inhibitory** effect of colchicine. Evidently, the microtubule app. plays an important role in the functional activity of the **taste** chemoreceptors.  
 IT 60-92-4  
 RL: BIOL (Biological study)  
 (taste chemoreceptor function response to, in frog, microtubules in relation to)  
 RN 60-92-4 HCAPLUS  
 CN Adenosine, cyclic 3',5'-(hydrogen phosphate) (8CI, 9CI) (CA INDEX NAME)

Absolute stereochemistry.



L41 ANSWER 65 OF 75 HCAPLUS COPYRIGHT 2002 ACS  
 AN 1979:608926 HCAPLUS  
 DN 91:208926  
 TI Cyclic guanosine 3',5'-monophosphate and phosphodiesterase activity in

mitogen-stimulated human lymphocytes

AU Takemoto, D. J.; Kaplan, S. A.; Appleman, M. M.  
 CS Univ. South. California, Los Angeles, CA, 90007, USA  
 SO Biochem. Biophys. Res. Commun. (1979), 90(2), 491-7  
 CODEN: BBRCA9; ISSN: 0006-291X

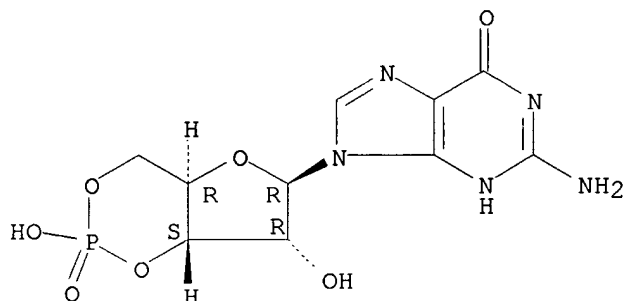
DT Journal  
 LA English

AB Following stimulation of lymphocytes with concanavalin A (con A), lymphocyte cyclic AMP phosphodiesterase activity gradually increased to values previously obsd. in leukemic lymphocytes. The changes in the enzyme paralleled cell proliferation as measured by increases in thymidine incorporation into DNA. The addn. of a guanylate cyclase **inhibitor** prepn. from the **bitter** melon prevented both the changes in the phosphodiesterase and the thymidine incorporation into DNA. This blockage was partially reversed by addn. of the cyclic GMP analog 8-bromo-cyclic GMP to the con A-stimulated normal lymphocytes. A possible role of cyclic GMP in a growth related alteration of cyclic AMP phosphodiesterase is suggested.

IT **7665-99-8**  
 RL: BIOL (Biological study)  
 (cyclic AMP phosphodiesterase induction in proliferating lymphocytes in relation to)

RN 7665-99-8 HCAPLUS  
 CN Guanosine, cyclic 3',5'-(hydrogen phosphate) (8CI, 9CI) (CA INDEX NAME)

Absolute stereochemistry.



L41 ANSWER 66 OF 75 HCAPLUS COPYRIGHT 2002 ACS  
 AN 1979:444510 HCAPLUS  
 DN 91:44510  
 TI Oral composition for treating tabagism  
 IN Janssens, Raymond  
 PA Monaco  
 SO Fr. Demande, 7 pp.  
 CODEN: FRXXBL  
 DT Patent  
 LA French  
 FAN.CNT 1

|    | PATENT NO.  | KIND | DATE     | APPLICATION NO. | DATE     |
|----|---|------|----------|-----------------|----------|
| PI | FR 2375860  | A1   | 19780728 | FR 1977-16      | 19770103 |
| AB | The compn. contained substances that <b>mask</b> the smell and <b>taste</b> of tobacco. Thus, a compn. was prepd. from powd. cloves |      |          |                 |          |

0.001, powd. ginger 0.008, vitamin C [50-81-7] 0.05, powd. coriander  
0.005, licorice 0.1, Na glutamate [16177-21-2] 0.01 and excipients 200 g.

IT **38966-30-2**

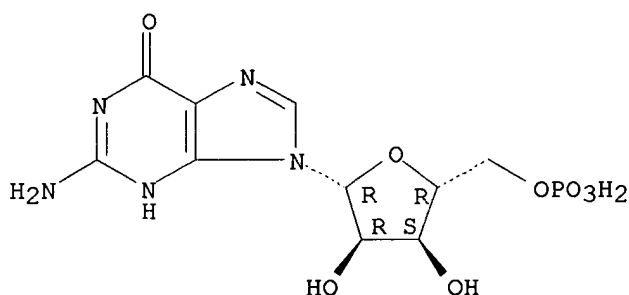
RL: BIOL (Biological study)

(tobacco smoking inhibition by compns. contg.)

RN 38966-30-2 HCAPLUS

CN 5'-Guanylic acid, calcium salt (9CI) (CA INDEX NAME)

Absolute stereochemistry.



●x Ca

L41 ANSWER 67 OF 75 HCAPLUS COPYRIGHT 2002 ACS

AN 1979:417123 HCAPLUS

DN 91:17123

TI Possible participation of 3,5-AMP in the chemoreceptor process of sugar cells of labellar sensilla of the fly (*Musca domestica*)

AU Gritsai, O. B.; Elizarov, Yu. A.

CS Mosk. Gos. Univ., Moscow, USSR

SO Mekh. Sens. Retseptsii, [Mater. Vses. Simp.], 3rd (1977), Meeting Date 1976, 171-6. Editor(s): Il'inskii, O. B. Publisher: Akad. Nauk SSSR, Nauchn. Sov. Kompleksn. Probl. Fiziol. Chel. Zhivotn., Leningrad, USSR. CODEN: 40OCAU

DT Conference

LA Russian

AB The stimulation of **taste** receptors of fly labellar sensilla by glucose (0.2M) or NaCl (0.1M) was increased by simultaneous application of cyclic AMP. Alloxan (**inhibitor** of adenylate cyclase) or imidazole (**inhibitor** of phosphodiesterase) blocked the stimulatory effect of cyclic AMP with respect to sugar receptors but had no effect on NaCl receptors, indicating a potential role for cyclic AMP in mediating chemoreception in sugar cells.

IT **60-92-4**

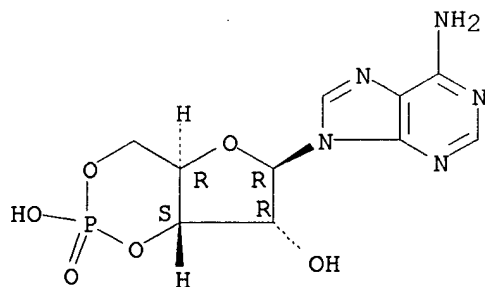
RL: BIOL (Biological study)

(glucose and sodium chloride receptors of housefly response to)

RN 60-92-4 HCAPLUS

CN Adenosine, cyclic 3',5'-(hydrogen phosphate) (8CI, 9CI) (CA INDEX NAME)

Absolute stereochemistry.



L41 ANSWER 68 OF 75 HCAPLUS COPYRIGHT 2002 ACS

AN 1978:576792 HCAPLUS

DN 89:176792

TI Role of the cAMP system in taste reception mechanisms

AU Samoilov, V. O.; Solov'ev, V. N.; Kozhemyakin, L. A.; Shmarov, D. A.

CS Voen. Med. Akad. im. Kirova, Leningrad, USSR

SO Dokl. Akad. Nauk SSSR (1978), 241(6), 1478-80 [Physiol.]

CODEN: DANKAS; ISSN: 0002-3264

DT Journal

LA Russian

AB The metabolic response of **taste** receptors of the tongue epithelium to chem. stimulants was studied in frogs. Caffeine, a phosphodiesterase **inhibitor**, decreased the flavoprotein/NADH ratio in the tongue epithelium in a concn.-dependent manner. This was accompanied by a logarithmic change in the integral afferent activity of the glossopharyngeal nerve. O consumption by the receptor epithelium was increased. Similar changes were obsd. with other **taste** stimulants, such as acidic, salt, and sweet substances. When applied to the tongue, caffeine increased the cyclic AMP (I) concn. of the epithelium (from 392 to 550 pmol/g), suggesting that the caffeine-induced stimulation of **taste** receptors was mediated by I. This was confirmed by expts. in which application of exogenous dibutyryl I to the frog tongue produced changes similar to those induced by chem. stimulants.

IT 60-92-4

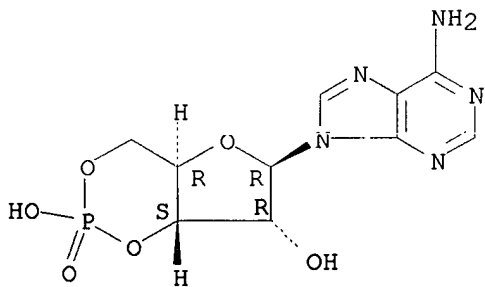
RL: BIOL (Biological study)

(in taste reception mechanism, in frogs)

RN 60-92-4 HCAPLUS

CN Adenosine, cyclic 3',5'-(hydrogen phosphate) (8CI, 9CI) (CA INDEX NAME)

Absolute stereochemistry.



L41 ANSWER 69 OF 75 HCAPLUS COPYRIGHT 2002 ACS

AN 1978:502563 HCAPLUS

DN 89:102563

TI Properties of cyclic nucleotide phosphodiesterase from lingual taste papillae

AU Ostretsova, I. B.

CS I. M. Sechenov Inst. Evol. Physiol. Biochem., Leningrad, USSR

SO Biokhimiya (Moscow) (1978), 43(6), 1037-44

CODEN: BIOHAO; ISSN: 0006-307X

DT Journal

LA Russian

AB Cyclic 3',5'-nucleotide phosphodiesterase (I) activity was estd. in exts. and partially purified preps. from functionally different parts of bovine tongue. I activity varied from 4.0 to 10.4 nmol/mg protein/min. The properties of I from circumvallate papillae were studied; the pH optimum was 8.0-8.5 and the Km values for cyclic AMP and cyclic GMP were 1.5 .times. 10-4M and 6.5 .times. 10-5M, resp. I activity did not change after treatment with trypsin, protamine sulfate (0.01-1.0%), heparin (0.01-1.0%), and **taste** agents (L-leucine (10-2 - 10-5M), quinine (4 .times. 10-3 - 4 .times. 10-8M), and D-glucose (10-1 - 10-4M). The protein **inhibitor** of I isolated from retinal rod outer segments markedly suppressed enzyme activity, whereas the protein activator from brain tissue stimulated it insignificantly. Thermostable protein modulators, which **inhibit** or activate (depending on exptl. conditions) I activity, were isolated from circumvallate papillae.

IT 60-92-4 7665-99-8

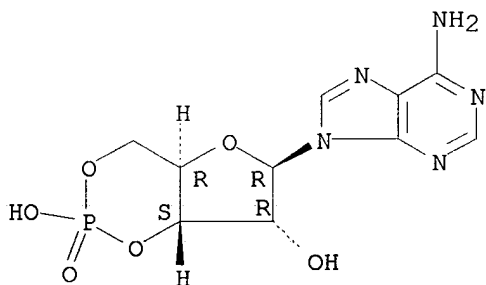
RL: RCT (Reactant)

(reaction of, with cyclic nucleotide phosphodiesterase, kinetics of)

RN 60-92-4 HCAPLUS

CN Adenosine, cyclic 3',5'-(hydrogen phosphate) (8CI, 9CI) (CA INDEX NAME)

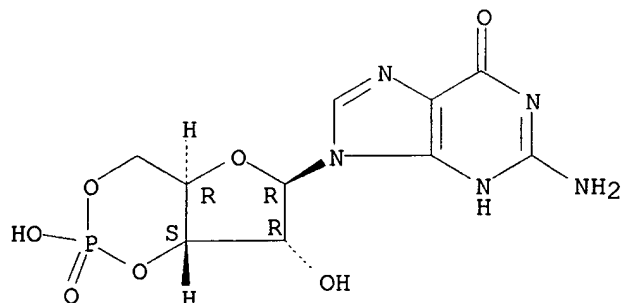
Absolute stereochemistry.



RN 7665-99-8 HCAPLUS

CN Guanosine, cyclic 3',5'-(hydrogen phosphate) (8CI, 9CI) (CA INDEX NAME)

Absolute stereochemistry.



L41 ANSWER 70 OF 75 HCAPLUS COPYRIGHT 2002 ACS

AN 1976:491389 HCAPLUS

DN 85:91389

TI Cat neural taste responses to nitrogen compounds

AU Boudreau, James C.; Oravec, Joseph; Anderson, William; Collings, Virginia; Nelson, Thomas E.

CS Grad. Sch. Biomed. Sci., Univ. Texas, Houston, Tex., USA

SO ACS Symp. Ser. (1976), 26(Phenolic, Sulfur, Nitrogen Compd. Food Flavors, Symp., 1975), 194-206

CODEN: ACSMC8

DT Journal

LA English

AB The role of 3 distinct neural groups that innervate fungiform papillae of the tongue of the cat in N compds. **taste** response was studied. Both group I and II units were sensitive to water solns. of animal tissues. When chicken, pork, beef, and fish were chopped and mixed with distilled water they elicited neural discharge from geniculate ganglion units when applied to the appropriate tongue receptor field. In testing a variety of compds. related to proline and histidine, it was found that the heterocyclic ring components were as active as the parent amino acids. Thus, the heterocyclic ring pyrrolidine was as stimulatory as L-proline and the imidazole ring was as active as L-histidine. Heterocyclic rings with only heteroatoms of O were inactive. S-contg. compds. were stimulatory but in a complex manner. The most stimulatory heterocycles were 3-pyrroline, pyrrolidine, morpholine, azetidine carboxylic acid, imidazole, piperazine, and piperidine. Azacycloheptane and azacyclooctane were both **inhibitory**.

IT 56-65-5, biological studies

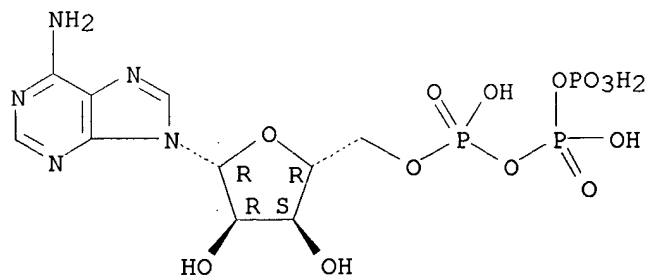
RL: BIOL (Biological study)

(taste receptor response to)

RN 56-65-5 HCAPLUS

CN Adenosine 5'-(tetrahydrogen triphosphate) (8CI, 9CI) (CA INDEX NAME)

Absolute stereochemistry.



L41 ANSWER 71 OF 75 HCAPLUS COPYRIGHT 2002 ACS

AN 1973:439382 HCAPLUS

DN 79:39382

TI Mechanism for the regulation of nicotinamide adenine dinucleotide-linked substrate oxidation in rat liver mitochondria

AU Olson, Merle S.; Allgyer, Thomas T.

CS Coll. Med., Univ. Arizona, Tucson, Ariz., USA

SO J. Biol. Chem. (1973), 248(5), 1590-7

CODEN: JBCHA3

DT Journal

LA English

AB The mechanism of the GTP-mediated regulation of the oxidn. of NAD- linked substrates in rat liver mitochondria was studied. A possible GTP effect on the electron transport or oxidative phosphorylation sequences at or near the first phosphorylation site was eliminated by the observation that the GTP-mediated **inhibition** of NAD-linked substrate oxidn. occurred in rotenone plus menadione- treated mitochondria in which electrons were shunted around Site I. Furthermore, the intramitochondrial pyridine nucleotides. NADH and NADPH, become greatly oxidized upon initiation of the **inhibitory** state. Cytochromes b, c, and a also become oxidized under these conditions. Apparently, reducing equivs. from the NAD-linked dehydrogenase reactions were not available to the electron transport chain at the NADH level during the GTP-mediated **inhibitory** state. GTP exerted its effect on this system by causing an **inhibition** of the .alpha.-ketoglutarate dehydrogenase multienzyme complex. Three other well documented **inhibitors** of the .alpha.-ketoglutarate dehydrogenase reaction, i.e. Na arsenite, parapyruvate, and 5-methoxyindole-2-carboxylic acid exactly mimicked the effects of elevated GTP levels on the oxidn. of NAD-linked substrates. All 4 of these **inhibitors** of .alpha.-ketoglutarate dehydrogenase caused an **inhibition** of the oxidn. of NAD-linked substrates, a drastic oxidn. of intramitochondrial pyridine nucleotides and redn. of the flavo- protein, dihydrolipoyl dehydrogenase. Thus, the entry of reducing equivs. into the electron transport chain in intact rat liver mitochondria apparently must occur via the **flavorpro-** tein dihydrolipoyl dehydrogenase, portion of the .alpha.-ketoglutarate de- hydrogenase complex. This flavine-linked transfer of reducing equivs. produced in the primary NAD-linked dehydrogenases of the mitochondrion to the NADH level of the respiratory chain is strongly controlled by the GTP level of the mitochondrion.

IT 86-01-1

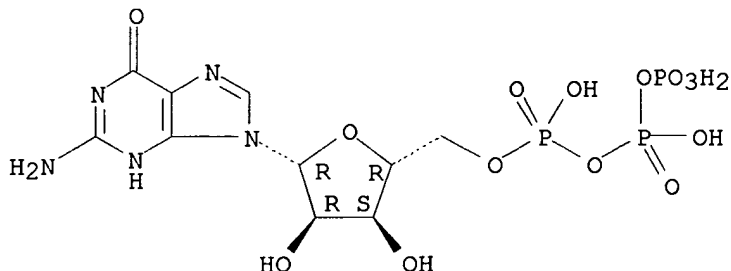
RL: BIOL (Biological study)

(oxoglutarate dehydrogenase inhibition by, mitochondrial NAD-linked substrate oxidn. in relation to)



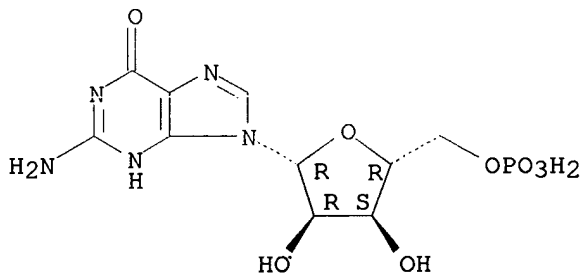
RN 86-01-1 HCAPLUS  
 CN Guanosine 5'-(tetrahydrogen triphosphate) (8CI, 9CI) (CA INDEX NAME)

Absolute stereochemistry.



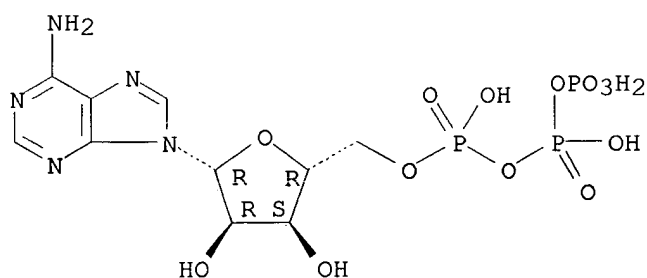
L41 ANSWER 72 OF 75 HCAPLUS COPYRIGHT 2002 ACS  
 AN 1973:82885 HCAPLUS  
 DN 78:82885  
 TI Binding of end product in the fermentation of nucleotides  
 AU Schwartz, J.; Margalith, P.  
 CS Dep. Food Eng. Biotechnol., Technion-Israel Inst. Technol., Haifa, Israel  
 SO Biotechnol. Bioeng. (1973), 15(1), 85-91  
 CODEN: BIBIAU  
 DT Journal  
 LA English  
 AB Mutants of *Streptomyces* 772 produced appreciable amts. of IMP and XMP, but only traces of GMP under ordinary fermn. conditions. This was probably due to the feedback **inhibition** of the trace end product, GMP. Through suitable fermn. techniques it was possible to overcome this internal control mechanism which increased yields of GMP. A description of the cultures, medium, resin, and assay employed is given. Although the addn. of dioxane was specific for GMP complexing while that of binding by anion-exchange resin was nonspecific, both systems yielded similar increases in the formation of **flavor**-enhancing nucleotides.  
 IT **85-32-5P**  
 RL: BMF (Bioindustrial manufacture); BIOL (Biological study); PREP (Preparation)  
 (manuf. of, end product binding in)  
 RN 85-32-5 HCAPLUS  
 CN 5'-Guanylic acid (8CI, 9CI) (CA INDEX NAME)

Absolute stereochemistry.



L41 ANSWER 73 OF 75 HCAPLUS COPYRIGHT 2002 ACS  
 AN 1969:9618 HCAPLUS  
 DN 70:9618  
 TI Chemical basis of feeding in the tick *Ornithodoros tholozani*  
 AU Galun, Rachel; Kindler, S. H.  
 CS Israel Inst. Biol. Res., Ness-Ziona, Israel  
 SO J. Insect Physiol. (1968), 14(10), 1409-21  
 CODEN: JIPHAF  
 DT Journal  
 LA English  
 AB This tick imbibes saline contg. reduced glutathione (GSH) and glucose almost as readily as whole blood. The effect of these 2 compds. was synergistic when tested at concns. found in blood. Glucose could not be replaced by fructose, galactose, arabinose, or sucrose. After prolonged starvation marked feeding response could be also elicited by isotonic saline contg. glucose and one of the following L amino acids: leucine, allose, isoleucine, proline, valine, serine, alanine, phenylalanine, and glutamine. Solns. contg. ATP or DPNH in place of GSH also induced max. feeding response. L-Glutamate and the SH reagent 5,5'-dithiobis(2-nitrobenzoic acid) **inhibited** feeding in the presence of GSH, ATP, or DPNH. Addn. of Mn<sup>2+</sup> or one of the heavy metals Cd<sup>2+</sup>, Zn<sup>2+</sup>, and Ni<sup>2+</sup> prevented feeding on all solns. It is believed that feeding is mediated by at least 2 kinds of chemoreceptors; one specific for GSH, ATP or DPNH, the other for amino acids. The identification of several compds. which, in certain combinations, induce feeding in *O. tholozani* can account completely for the **taste**-response to blood in chem. terms.  
 IT **56-65-5**, biological studies  
 RL: BIOL (Biological study)  
 (Ornithodoros tholozani feeding response to)  
 RN 56-65-5 HCAPLUS  
 CN Adenosine 5'-(tetrahydrogen triphosphate) (8CI, 9CI) (CA INDEX NAME)

Absolute stereochemistry.



L41 ANSWER 74 OF 75 HCAPLUS COPYRIGHT 2002 ACS  
 AN 1968:94121 HCAPLUS  
 DN 68:94121  
 TI Patterns of impulses produced by monosodium glutamate and 5'-ribonucleotides in taste units of the rat  
 AU Sato, Masayasu; Yamashita, Satoru; Ogawa, Hisashi  
 CS Kumamoto Univ. Med. Sch., Kumamoto, Japan  
 SO Olfaction Taste 2, Proc. Int. Symp., 2nd, 1965 (1967), Meeting Date 1965, 399-410

CODEN: 19SDAD

DT Conference

LA English

AB Recordings were made of the chorda tympani response to stimulation of the tongue of the rat by Na salts of IMP, GMP, UMP, and CMP, given with MSG. Addn. of GMP or IMP at 1% of the amt. of MSG produced a response magnitude exceeding that of MSG alone about 5-fold. The ability of the 4 ribonucleotides to produce the enhancement when mixed with MSG is in the order of GMP > IMP > UMP > CMP. The responses when mixts. of MSG and GMP or IMP dissolved in NaCl soln. were used as stimuli were smaller, suggesting that NaCl **inhibits** the potential response. The results obtained on the rat chorda tympani response and those on the human **taste** sensation yielded a similar relation, indicating that the **flavor**-enhancing ability of the ribonucleotides is attributed entirely to the receptor mechanism and that this is reflected in the response of the chorda tympani nerve. ~~Impulse discharges by 4 basic kinds of taste stimuli~~ (0.1M NaCl, 0.5M sucrose, 0.01N HCl, and 0.02M quinine), 0.3% MSG, 0.3% ribonucleotides were recorded from a few nerve fibers in the chorda tympani of the rat. Among 14 units which showed a prominent response to NaCl, 11 showed a poor response to HCl and quinine, and to sucrose. Fourteen units showed a response to sucrose and an enhanced response to mixts. of MSG and ribonucleotides, the latter being higher than in the units which were sensitive to NaCl. Other tests also indicate that the response to a mixt. of MSG and GMP is linearly related to the sucrose response. No significant correlation was obtained between the response of MSG and UMP and that to sucrose, indicating that the former response is related to sucrose. If the discrimination between stimuli is related to the impulse frequency, and highly correlated stimuli **taste** alike, but uncorrelated ones **taste** differently, then the mixt. of MSG and GMP (or IMP) produces a **taste** sensation which is to some extent similar to that by sucrose but is different from the **taste** of a mixt. of MSG and UMP.

IT 58-97-9, biological studies 63-37-6, biological studies

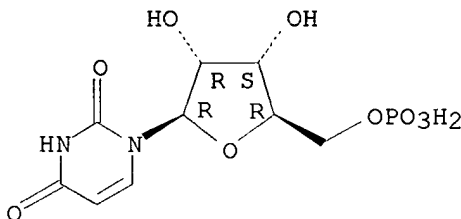
RL: BIOL (Biological study)

(taste enhancement by)

RN 58-97-9 HCAPLUS

CN 5'-Uridylic acid (8CI, 9CI) (CA INDEX NAME)

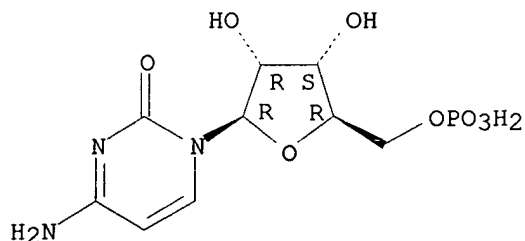
Absolute stereochemistry.



RN 63-37-6 HCAPLUS

CN 5'-Cytidylic acid (8CI, 9CI) (CA INDEX NAME)

Absolute stereochemistry.



L41 ANSWER 75 OF 75 HCAPLUS COPYRIGHT 2002 ACS

AN 1968:58391 HCAPLUS

DN 68:58391

TI Role of macroergic compounds in the function of taste receptors. Effect of substances altering the energy metabolism on the functional activity of taste receptors

AU Yur'eva, G. Yu.

SO Vestn. Mosk. Univ., Ser. Mat., Mekh., Astron., Fiz., Khim. (1967), 22(4), 21-6

CODEN: VMUMAB

DT Journal

LA Russian

AB Expts. were performed on frog tongue. The prepn. was carried out by killing the animal and positioning the tongue on a plate. The blood circulation was replaced by a perfusion with a Ringer soln. (0.5-1.0 ml./min.). The irritation of taste receptors was performed by placing the solns. under investigation on the dorsal part of the tongue. The activity of the taste receptors was registered by an oscillograph interconnected with the corresponding nerve fiber. As irritating agents the following solns. were used: NaCl (3%); quinine (2 .times. 10<sup>-4</sup> g./ml.), glucose (3%), and distd. water. The effect of high-energy compds. on the receptor irritation was investigated by the use of ATP (2-3 ml. of a 10<sup>-4</sup>-10<sup>-5</sup> g./ml. soln.), 2,4-dinitrophenol (2-3 ml. of a 5 .times. 10<sup>-5</sup>-5 .times. 10<sup>-4</sup> g./ml./soln.), and a standard soln. (4-6 ml.) of thyroxine. The results show that the activity of the receptors depended on the amt. of the macroergic phosphates. A small amt. of ATP supplementing the receptor side increased the count of registered impulses, while a high concn. of ATP had an opposite effect. The action of uncouplers of oxidative phosphorylation (2,4-di-nitrophenol and thyroxine) resulted in a depression of receptor activity.

IT 56-65-5, biological studies

RL: BIOL (Biological study)

(taste receptor response to)

RN 56-65-5 HCAPLUS

CN Adenosine 5'-(tetrahydrogen triphosphate) (8CI, 9CI) (CA INDEX NAME)

Absolute stereochemistry.

